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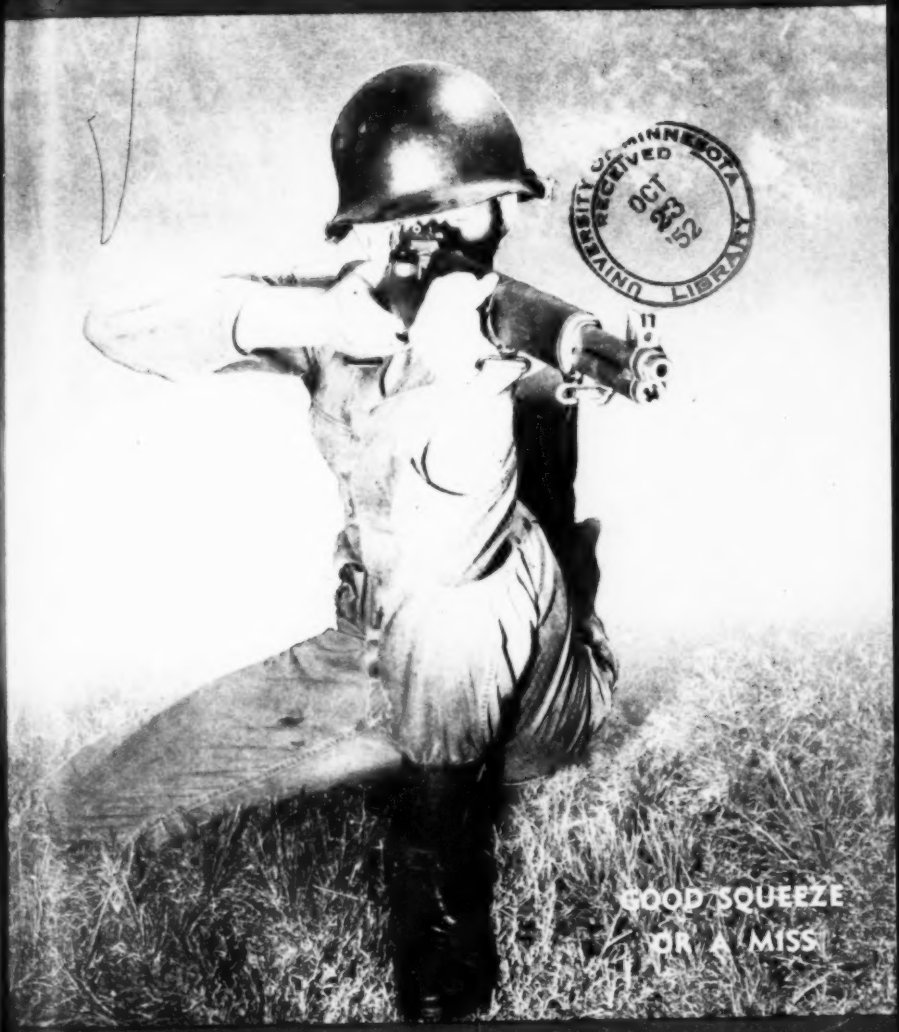

GOOD SQUEEZE OR A MISS

OCTOBER 1952

The Magazine For Infantrymen

INFANTRY SCHOOL QUARTERLY

The latest thought on Infantry

THE INFANTRY SCHOOL, FORT BENNING, GEORGIA

THE INFANTRY SCHOOL

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INFANTRY SCHOOL QUARTERLY

VOLUME 41, NUMBER 2 **OCTOBER 1952**

Page

Offensive Tactical Air Support 6
Capt William C. Wood, Infantry

It's Either a Good Squeeze or a Miss 20
Maj Warren P. Davis, Infantry

Airborne and the Atomic Weapon 29
Maj James K. Cockrell, Infantry

They Can Work Together! 32
Capt Alfred Phillips, Infantry

Toward Better Intelligence 38
Lt Col Oliver O. Dixon, Infantry

Combat and Training Tips 44

The New 2½ Ton GMC 46
Maj James A. Patterson, Infantry

What's *Your* Decision? 53
Lt Col Emil V. B. Edmond, Infantry

War in the Sub-Arctic 64
Maj Anders Grafstrom, Swedish Army

The PT Test 73
Lt Palmer S. McGee, Jr., Infantry

So You Want Aerial Photos? 82
Lt Maurice B. Tuman, Infantry

The Attack Course 92
Lt Col Harry M. Kemp, Infantry

The Infantry and Psychological Warfare 100
Lt Fred W. Wilmot, Infantry

Letters to Editor 105

Meet the Authors 107

Annual Index 109

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Editor's Page

To Our Readers:

The other day we received a letter that indicated a possible oversight on our part. The writer, an Infantry Lieutenant—whose article we had published—was surprised when we sent him a check. We have since discovered that many of you didn't know that we paid for articles.

It's true! We do pay. Don't get the impression, however, that you'll get rich writing for us. You won't, but we can say that you'll have no regrets for having written.

Perhaps it can be blamed on the weather, or a change in your situation, but our mailbag (except for the usual number of bills) was rather lean this month. This we find disturbing since we depend upon your letters to keep us abreast of your ideas and opinions. You've probably noticed that we have a Letters to the Editor Column for your convenience. So why not write and give us your reaction to our articles. Who knows—you may offer a new idea—and new ideas are highly regarded here at the Infantry School.

In this issue we're starting a feature called "Combat and Training Tips." We believe it will be a worthwhile service. Its ultimate success, however, depends upon the tips you send us. We suggest that you keep your tips down to one or two paragraphs. Don't hesitate merely because you feel you can't write. You'll notice that William Shakespeare isn't on our editorial staff.

Let us hear from you.

Good luck!

John K. Erey

Major, Infantry

Offensive Tactical Air Support

By CAPT. WILLIAM C. WOOD, Infantry

HAVE you ever cringed in a bunker while fifty-caliber slugs ripped through the logs over your head? Have you ever been knocked senseless by the concussion from a rocket's blast? Have you ever tumbled screaming down the side of a mountain trying to outrun the deadly stream of fiery death called napalm? Have you ever been blown into the dirt by a 500-lb. fragmentation bomb bursting near you?

If you had, probably you wouldn't be reading this QUARTERLY.

This is what it's like to be on the receiving end of United States airpower.

What makes tactical airpower a matter of interest to Infantrymen? Any weapon or weapons system that can reduce the risk that an Infantryman must take, and, at the same time, increase his ground-gaining and holding power, is greatly to be desired.

You're an Infantry company commander in combat. Your company, Fox Company, is a pretty fine outfit. Your own reputation is good, for the men know that you'll use all supporting weapons to the fullest extend of their capabilities before you'll risk their lives.

But just now you've run into a determined enemy force. They're holding their hill, Hill 201, in spite of artillery fire of almost every known caliber and type and unlimited mortar fire. Two companies of your battalion have tried to take the hill. They have failed.

Your company is stretched out along the ridgeline behind you, ready to try again. A steady procession of artillery rounds rustles overhead, but still you continue to receive heavy fire from dug in machine gun positions on the enemy held hill.

You have the Battalion S3, Major Operation, on the field phone and you're discussing the problem with him.

CAPT FOX: "Say Major Operation, we're still receiving heavy fire from Hill 201. Our indirect fire isn't having too much affect on those dug-in gun emplacements. The visibility is good, and an air strike along the ridge line of Hill 201 may be the answer to our problem. Unless those guns are blasted or burned out of there before I jump off, my unit will probably suffer heavy casualties as we advance."

MAJ OPN: "Think that's a good idea. I'll check with the old man and let you know." (Maj Opn relays Capt Fox's recommendation to Lt Col White, the battalion commander.)

LT COL WHITE: "All right. Get an air strike as soon as you can. Notify Fox Company commander to be ready to move out as soon as the last plane finishes."

When the Battalion CO told the S3 just now, "Get an air strike," the Air Ground Operations System and the Tactical Air Operations System — the air-ground team — was set into motion.

The Bn S3 gets the Regimental S3, Major Jones, on the telephone.

MAJ OPN: "Things are about the same up here. We're going to try it again with Fox as soon as we can. Like to have an air strike for preparation. All this artillery and mortar fire has jarred them plenty but they're still in there. Colonel wants to move Fox Company forward as soon as the planes are through. Think we can get a strike right away?"

MAJ JONES: "I think we can get it. Let me get some information from you that the Air Force will need to hit the target. First of all, what's the *target location*?"

MAJ OPN: "Able Sugar 394508, Able Sugar 396508, and Able Sugar 399508."

MAJ JONES: "*Target description?*"

MAJ OPN: "Estimated 200 enemy in trenches and bunkers. Suspected dug in machine gun locations."

MAJ JONES: "*Results desired?*"

MAJ OPN: "Kill enemy, and destroy those machine guns."

MAJ JONES: "*Tactical significance?*"

MAJ OPN: "This enemy strong point is holding up an Infantry battalion, harassing it with machine gun fire, and generally making itself a nuisance."

MAJ JONES: "Right. What *time* do you want the planes over the target?"

MAJ OPN: "As soon as you can get them here."

MAJ JONES: "I'll put down "soonest." Maybe we can get a flight that couldn't be used elsewhere, but if we can't let's plan on 1100."

MAJ OPN: "All right. Explain to them that we're waiting on this strike to attack."

MAJ JONES: "Right. Now, what is the *target distance* and *direction* from our troops?"

MAJ OPN: "Distance is approximately 1,000 yards. Direction is north. You have our exact position. They're on Hill 201, due north of Fox Company's position."

MAJ JONES: "If the flight commander requests the target be marked, can you mark the target with colored smoke?"

MAJ OPN: "Yes, we can do that. We'll use green smoke rounds to mark target if requested."

MAJ JONES: "Fine, I'll put that under *'Control Information.'* I'll alert 'Cobalt 14' the regimental TACP to be ready to move up to Fox Company's location so that he'll be in position to control the flight if the request is approved by higher headquarters. In the request to higher headquarters I'll report his location as AS3950. That will be in the vicinity of where Fox Company is now." (The Tactical Air Force furnishes the Infantry regiment a TACTICAL AIR CONTROL PARTY, commonly called the TACP. The TACP is a four-man party of one officer and three enlisted men. The officer is a fighter pilot with considerable air ground support missions to his credit. He heads the TACP and is known as a forward air controller, or FAC. The mission of the TACP is to assist the regimental commander with all air support matters and to control all requested air support missions within that area between the unit's front line position and the bomb line. The TACP is a part of the TACTICAL AIR OPERATIONS SYSTEM and attached to a regiment, or theoretically, attached to the AIR GROUND OPERATIONS SYSTEM at the regimental level.)

MAJ OPN: "That will be fine."

MAJ JONES: "Would you like to

include anything under *'Other Pertinent Information'?"*

MAJ OPN: "Yes, I want to be sure the Air Force and we are working with the same bomb line. The bomb line we're working with runs along Highway 60. That's about four thousand yards distant to our front, and it runs parallel to our front." (The bomb line is an imaginary line designated by the ground forces, which can be identified easily from the air by terrain features. Air attacks beyond this line may be executed without clearance from the ground forces. Inside the bomb line air attacks require detailed integration with the fire and movement of the ground forces. The bomb line is established by the highest army headquarters in the field and should be, insofar as possible, based on the recommendations of subordinate ground units. The line is established to assure that all air support missions, in the proximity of friendly forces, are controlled to reduce the probability of friendly planes mistakenly attacking friendly ground forces. The bomb line is normally established one to four thousand yards ahead of the friendly front line position.)

MAJ JONES: "That's the same one we have in effect, but I'll pass this information on to be sure there is no slip-up."

MAJ OPN: "Oh yes, one other thing. Can we ask for specific armament or type of aircraft?"

MAJ JONES: "You can ask, but it's up to the Tactical Air Force to decide. Once we let them know the type target, they'll send the best type plane with the most effective load of armament to do the job."

MAJ OPN: "Then all I can add is, HURRY."

MAJ JONES: "I'm in the FSCC* now. I'll get together with the fire support coordinator and have him check the request. If he believes the indirect fire isn't doing the job, as it appears not to be, and OK's your air request, I'll get it on up to division. I'll let you know if you're going to get the air support."

MAJ OPN: "I know these fighter pilots aren't too happy about flying low over an area that we're laying indirect fire on. When shall we call off the high angle fire in the regimental zone?"

MAJ JONES: "Not until the planes appear in the area. When they arrive, the artillery FO, with Capt Fox, can get the word back to his battalion fire direction center. We're in touch with the FDC and we can also call off the fire of any other unit that may be delivering high angle fire on the target at that time. Also, we'll only call off that indirect fire falling on the target and any other fire that may endanger the fighter planes, not necessarily all indirect fire in the entire regimental zone."

The operator breaks down the call; the request is in the mill.

Maj Jones, the regimental S3, checks with the fire support coordinator to determine whether or not the mission is beyond the capabilities of artillery and other nonorganic supporting weapons. (The S3 for regiment, or one of his assistants designated to handle air support matters, works closely with personnel in the regimental fire

*FSCC — Fire support coordination center.

support coordination center, the FSCC. FSCC personnel are men with sufficient training and background to qualify them to logically advise the Infantry unit commander on the most effective use of ground, naval, and air supporting fires. The artillery commander of the direct support artillery unit is designated by Training Circular 23, Department of the Army, dated 3 August 1951 as the coordinator of the FSCC. This designation is an appropriate one as all means of fire support are not always available in any campaign. Artillery is the sole means outside the regiment that will normally be present. If, *in line*

with the Infantry unit commander's policy, it is found that the target can be taken under indirect fire, and the target as effectively covered by one of these means, the unit requesting air support will be so advised. If, after taking into consideration all factors, the fire support coordinator deems it a suitable air target, the request will be sent to the next higher headquarters for approval. The regimental FSCC should be at the regimental headquarters so that the FSCC, as a special staff section, may keep the regimental commander advised as to the best use of indirect fire support and air support.)

MAJ FSCC: "We agree this is a target that air support can help us with. The fire we're laying on that ridge hasn't proven very effective. Recommend you call G3 Air at division right away and give him the request."

The G3 Air, working within the division FSCC, has received the air support request. If the division FSCC determines the fire support means within the division cannot effectively destroy or neutralize the enemy holding up that battalion, the G3 Air radios the request directly to the JOINT OPERATIONS CENTER (or JOC) at Army level. The Corps G3 Air, within the Corps FSCC, monitors the request; silence on his part indicates approval.

At JOC the request is considered in the light of the overall air-ground situation for the day. If the weather is not operational, or a maximum effort is being made in another part of the Army front, or aircraft are not available, the request may be turned down. But if

the G3 Air and the Combat Operations Officer agree that the request can be granted, the Operations Officer immediately sends an order to the fighter unit selected to perform the mission. Information concerning the mission is sent to the Tactical Air Control Center (TACC) which will control the flight until the mission is completed. (This could be a Navy, Marine, or UN unit, not necessarily USAF.)

In an Air Force operations tent somewhere in the combat zone, four pilots huddle around a tent stove. They are wearing flying gear, their

parachutes and helmets lie close by. Their pockets bulge with escape equipment — a smoke flare, a package of emergency rations, and any number of items to help them evade capture in case they are forced down in enemy territory.

The leader of the four is briefing the others:

"Our troops are along this line. (He points to a line on the map.) Here is the bombline, along Highway 60. We are 20 minutes from the front-line area. When we get a call, our route will be due north until we check in with the control center. I'll take a heading from there to target area.

"Our call signs for today are Elsewhere Able 1, 2, 3, and 4. Smitty, you lead the element.* We'll fly abreast going up and back. Keep your eyes peeled for bandits.** Several were reported in the area yesterday.

"Take off will be the same as always. We're using runway 20. You guys stay off the air unless you're in trouble — these channels are crowded. If you do get into trouble, head south, get some altitude, and make it known. The other member of the element will stick with you. If you go down, the remainder of the flight will give cover 'til we get help in there.

"String formation on the target unless I tell you different. Any questions?"

Outside, four F-80's stand by on ground alert loaded with napalm, rockets and belts of 50 caliber ammo. Crew chiefs are close by, ready for immediate take off.

The phone rings. The flight leader answers: "Roger, Elsewhere Able Leader here. Work with Cobalt 14. Give me those coordinates again."

"Roger, I have it, AS 3950. We'll be airborne in 3 minutes."

After takeoff, the leader sets the course. He knows this area like the back of his hand, but he traces his position along the map with his finger. Ten minutes out he calls the control center for final briefing.

"Hello Mellow, Elsewhere Able here with four aircraft, napalm, rockets and .50 caliber, prebriefed for Cobalt 14. Do you have anything for me?" (Maybe a higher priority mission has come in and this flight will be diverted. In that case, the leader receives new coordinates. If not, the controller completes the briefing and they proceed north.)

On the ground, you, the company commander of "Fox" Company, sit there in the crater that is your command post and wonder what they are doing to your air support request back in the rear echelon. The field phone beside you jingles, your messenger answers the phone and informs you that the battalion S3, Major Opn, is on the phone.

MAJ OPN: "I just received a call from regiment. Your request for air support has been approved. The flight of four aircraft will be over the target at 1100 hours. That's — twenty minutes from now. Cobalt 14, the regimental TACP, has just reported in here, and the battalion CO is bringing Cobalt 14 to your location. The artillery liaison officer will be with him too. The artillery liaison officer, working with the TACP, will lift his fires when

*Two airplanes.
**Air Force slang for enemy aircraft.

the air strike is coming in. Once he gets the OK from the TACP, he'll commence firing again as soon as the planes have cleared the area."

CAPT FOX: "Good, we'll be all set to jump off after the air strike. I'll let you know when it's completed. While I've been talking to you, the CO, TACP, and artillery liaison officer arrived so we're all set."

MAJ OPN: "OK, Fox, let's hope the air strike does the trick."

CAPT FOX: "Right, I'll also notify you when to get the word out to have all mortar fire in the regiment lifted from the target area."

(It is apparent that some time will have elapsed between Fox Company's request for air support and the arrival of the close support aircraft. In this case we assume that the need for such air support was not foreseen and the ensuing delay is unavoidable. However, it is possible to arrange for close air support at a scheduled time. This is done through *preplanned missions.*

The preplanned mission is that mission jointly agreed upon by the air and ground commanders, or their representatives, at the JOC, several hours or several days before execution. This type mission would be requested to fit into an operation planned, say for example, 24 hours or several days hence. The request is processed through the various FSCC's to the JOC at army headquarters.

Tactical air not only offers fighter bomber support to the Infantry but aids the foot soldier with photo and visual reconnaissance missions. In the situation assumed in this article, either a photo or visual reconnaissance flight before the operation might have detected the enemy strength that caused trouble for the attacking companies. A photo or visual reconnaissance may be either an immediate or preplanned mission. Tactical aircraft and army aircraft organic to an Infantry division are both capable of performing such missions. Within the division, corps, and army headquarters, the *S2-G2* personnel normally handle, for the commander, requests for visual and photo reconnaissance missions. The *S3-G3* personnel normally concern themselves with missions requesting offensive air support. This is not a hard and fast rule, but is *normally* the working arrangement within the various headquarters.)

The TACP and Capt Fox await the arrival of the tactical aircraft.

Presently, you hear a dull drone off to the south. A T-6 comes slowly up the valley, banking frequently to look for friendly air panels. (From the air it is difficult for a pilot to locate the front line location of the ground troops. To assist the pilot in the location of the front line troops as they advance, the AP-50 panel set, organic to all rifle companies, has seen extensive use in Korea. Colored smoke was also used by many units. In Korea, the enemy has, on occasion, captured our panels and had colored smoke of his own. Whenever our units would display a panel or ignite colored smoke to indicate their location to tactical aircraft circling overhead, the enemy would display the same color panel or ignite the same colored smoke and needless to say, greatly confused the pilot as to the location of friendly troops. One unit overcame this enemy practice by furnishing each front line rifleman, and forward observers from

the mortar and artillery units with a piece of red or yellow cloth 24 inches by 24 inches in size. Under the supervision of the platoon leader, these square panels would be displayed when tactical aircraft were overhead. From the air the panels denoted a red dotted trace on the ground and facilitated easy recognition of friendly ground troops by the pilots. The enemy, it is believed, hesitated to use such a method to counter this recognition system as it would disclose a complete trace of their front line to unfriendly eyes from above.)

The T-6 passes over, spots your front-line location by the organic panels you have displayed and, climbing to avoid possible enemy ground fire, he flies out beyond the friendly front lines to look for possible enemy targets. He is ready to control an air support mission. (This AT-6, commonly called a "Mosquito" is more or less an airborne TACP. The "Mosquito" is used to control air support missions on targets that are out of visual

range of the ground TACP. It is extremely useful in hilly or mountainous country, and has seen extensive use in Korea.)

In a very few minutes you will see a silver glint off in the distant sky. Four F-80's. As the flight approaches your location, Cobalt 14, the TACP establishes radio contact with the flight leader, Elsewhere Able.

COBALT 14: "This is Cobalt 14 to flight leader of F-80's overhead — are you pre-briefed to work with me?"

ELSEWHERE ABLE LEADER: "Roger, Cobalt 14. This is Elsewhere Able Leader here. Do you have a target for us?"

COBALT 14: "Roger, Elsewhere Able Leader. I am located right below you at Able Sugar 3950. Can you pick up my location and do you see the panels of the Infantry unit I am with?"

ELSEWHERE ABLE LEADER: "Roger Cobalt 14. I see your location and panels."

COBALT 14: "I want you to work the ridge line between map coordinates Able Sugar 394508 and 399508. There is an estimated 200 enemy in trenches and bunkers and suspected machine gun locations at Able Sugar 394508, Able Sugar 346508 and Able Sugar 399508."

ELSEWHERE ABLE LEADER: "Grid locations are difficult to pin-point in the mountainous terrain. Will you mark target with smoke."

COBALT 14: "Wilco. Wait." (In the request submitted by the Infantry unit, mention was made that upon request by pilot, target would be marked by using green smoke.)

COBALT 14: "Hit! Work ridge line five hundred yards east of smoke." (Cobalt 14, working with the artillery liaison officer, is able to tell the flight leader the exact instant the smoke round hits. In the event the enemy fires a smoke round of the same color into another area in an attempt to confuse the pilots overhead, this notification of "Hit" will enable the flight leader to pick out the correct smoke round to orient himself. This means of designating a target location to fighter aircraft when utilizing smoke is currently being used by some units in Korea.)

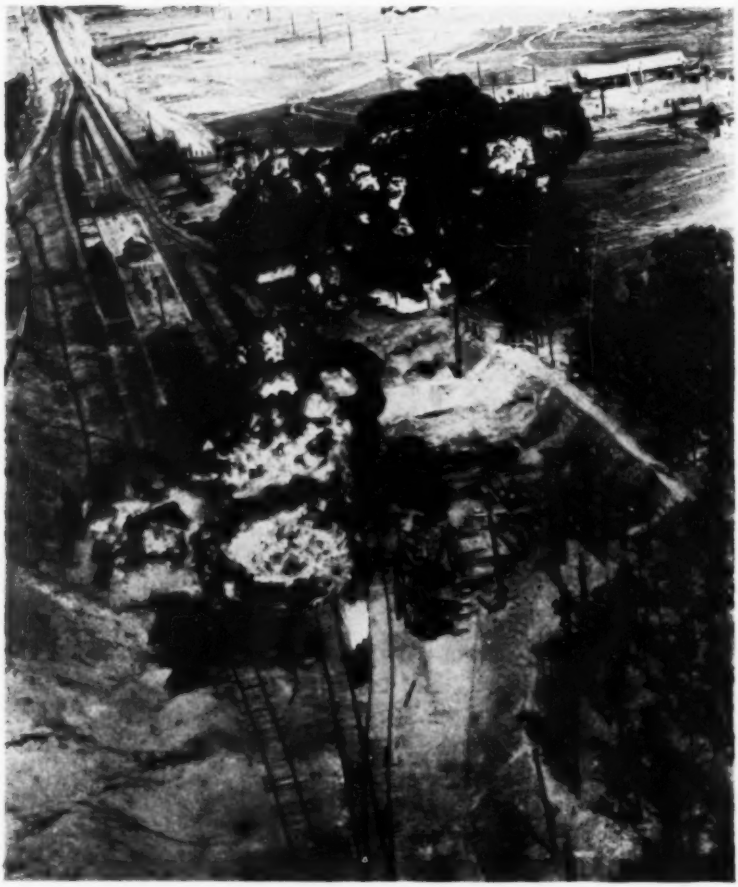
ELSEWHERE ABLE LEADERS "I believe I have the target located. That ridge line is just north of the hill where your panels are displayed."

COBALT 14: "That's Roger, Elsewhere Able. Recommend you make pass from the east to west to east along ridge line. Orbit your present location until the indirect fire is lifted from the target area."

ELSEWHERE ABLE LEADER: "Roger, Cobalt 14. Will do."

The artillery liaison officer, with Capt Fox and Cobalt 14, requests all indirect fire be lifted from the target area. His request goes back through artillery channels and filters through the FDC's and FSCC's of those units firing or capable of delivering indirect fire on the target area. Capt Fox requested the battalion S3 to get the word out to lift all mortar fire in the regiment off the target area. In a matter of a few minutes all indirect fire has been lifted from the target area and OK has been given to the fighter aircraft to begin working the target.

The flight leader checks friendly troop locations once more and makes a dry run on the target to assure himself and the TACP that he



has the right target. Once everything is outlined, the flight leader positions himself for the first pass.

ELSEWHERE ABLE LEADER: "This is Elsewhere Able Leader to flight. You have seen my pass on the target. Take your interval. Napalm on the first pass. I will take the first part of the ridge. Each plane drop its load a little further down."

Eight 110-gallon napalm tanks hurtle towards the hill in rapid succession. Each tank can effectively cover an area approximately half the size of a football field with flaming napalm. On the next pass twenty-four five inch rockets plow into the hillside and suspected machine gun locations. Each time a plane makes a pass, the pilot fires a

few rounds of 50 caliber machine gun to discourage any light fire. After 25 minutes they complete their mission, pull off the target, and check out of the area with the TACP. Indirect supporting fire is resumed. You feel compelled to say, "Well done."

The men of Fox Company are moving forward. You feel sure that your chances of success have been bettered because of the supporting fire Fox Company has just received from the tactical aircraft. The enemy doesn't like to die any more than we do. Even if this strike didn't kill them all, it probably had a very definite demoralizing effect on them.

The Infantry, artillery, and armored forces gained a new and powerful addition to their team in tactical aircraft. The proper use of this new member can help you — the Infantry commander.

Never in history has the importance of maintaining strong, well trained, well equipped, and well balanced armed forces been so clear.

Secy. of the Navy Dan A. Kimball

It's Either a Good Squeeze or a Miss

By MAJOR WARREN P. DAVIS

A RIFLEMAN who can't shoot his rifle accurately is just about as useless as a carpenter who can't drive a nail correctly. If some troop leaders were in the building business, they'd fire employees that couldn't use the main tools of their trade; but as a unit leader or commander they'll condone their soldiers' inability to squeeze the trigger correctly. Possibly the reason for this odd circumstance is the fact that many people do not understand the need for accuracy in small arms fire.

Actually the Infantry soldier in combat should in every case aim* his rifle at a definite target each time he fires. His target may not be an enemy soldier but only a location such as the base of a fense post or bush or freshly turned earth where an enemy is suspected of being concealed. Whatever the target, each shot must be an aimed shot intended to hit the object selected. The idea of aiming the rifle so accurately as to hit point targets must be thoroughly ingrained in every rifleman and leader of riflemen. "Area fire" is delivered by artillery, mortars, machine guns, and other weapons within or attached to the regiment or battalion, but the fire power of an Infantry platoon is heavily dependent on the ability of its riflemen to hit point targets.

To achieve this ability and to give the platoon the ultimate in fire power we must carefully train our soldiers as riflemen.

The new FM 23-5 thoroughly presents the six steps of preparatory marksmanship instruction. However, the third step, "Trigger Squeeze," due to its extreme importance, certainly merits additional attention and effort in teaching marksmanship.

Trigger squeeze, in its simplest terms, is nothing more than the art of separating the trigger from the hammer so gently that the rifle does not move as the hammer travels forward to hit the firing pin. Acquiring this ability is the most important single step in rifle shooting. No short cuts can be allowed in its teaching, the full amount of practice allowed for must be used and that practice must be carefully supervised.

The Infantry School begins instruction on trigger squeeze by making sure the rifle is held properly. Notice in Figure 1 how the right hand is placed on the rifle

*In the assault, when the crouch position is used, the sight picture is not employed.

stock. The thumb is across the top of the stock with the shooter's cheek pressed firmly against it. The lower three fingers and the thumb hold the rifle tightly. The trigger finger is not yet inserted in the trigger guard. Check to see that the thumb and fingers tightly grasp the rifle and the cheek is firmly pressed against it to form a "spot weld."* The trigger finger must now be carefully inserted in the trigger guard so that the pad of the finger from tip to the first joint is in contact with the trigger. (Figure 2.) When an average size hand holds the rifle in this manner the base of the trigger finger does not press against the rifle stock. A slight amount of daylight is visible between the finger and the stock. (Figure 3.)

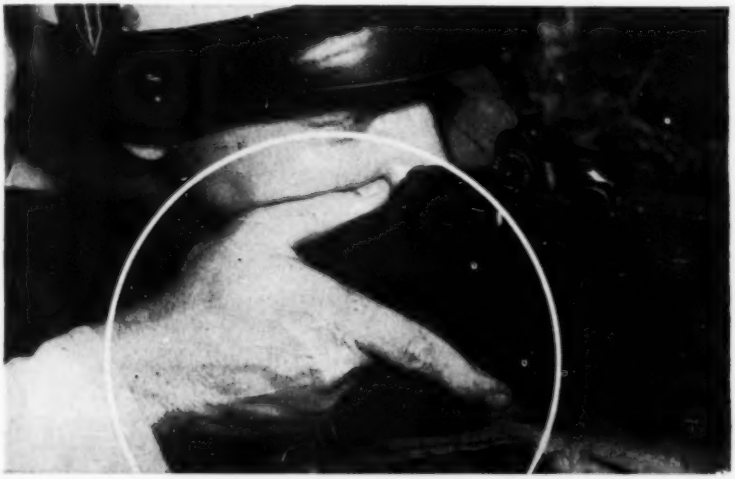


Figure 1. Notice how the right hand is placed on the rifle stock. The thumb is across the top of the stock with the shooter's cheek pressed firmly against it. The lower three fingers and the thumb hold the rifle tightly and the trigger finger is still not inserted in the trigger guard.

Our next problem is to show the soldier that the finger pad must move straight to the rear. A rearward movement prevents a sidewise pressure on the rifle through the trigger. To do this, have each man place an empty cal .30 cartridge case in his right hand with

*The importance of the "spot weld" cannot be over emphasized. When the shooter keeps his cheek firmly in contact with the stock and his thumb, he is assured that for each shot his aiming eye is located correctly with relation to the rear sight. Good solid pressure also prevents the "mouse" frequently seen under the eye of the inexperienced shooter.

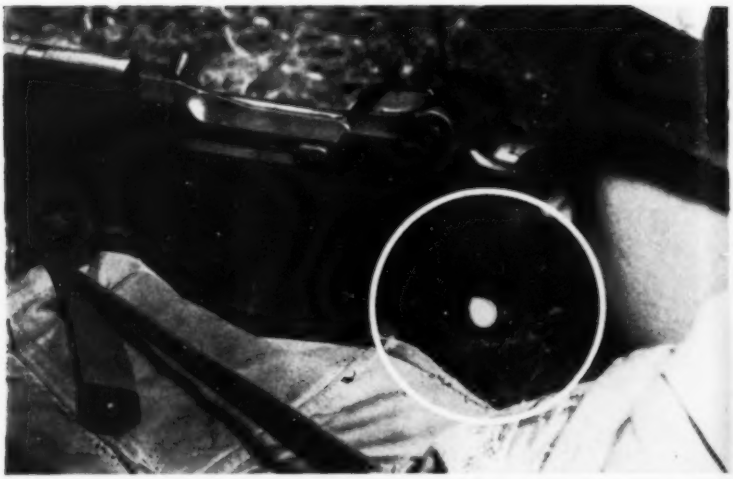


Figure 2. The pad of the trigger finger — from the tip to the first joint — is in contact with the trigger.

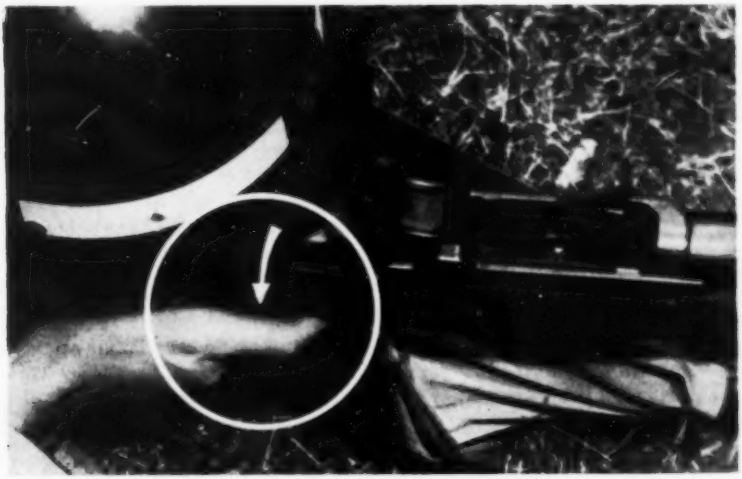


Figure 3. Notice that a slight amount of daylight is visible between the finger and the stock.

its base against the trigger finger pad and its neck against the web between the thumb and trigger finger. (See Figures 4 and 5.) Now have the soldier practice moving his trigger finger tip, applying pressure on the base of the cartridge

in such a manner that the cartridge moves back without the slightest amount of sideward movement. This brief exercise gives the soldier a mental picture concerning the "movement of the finger tip straight to the rear."

Our next step is to have the soldier close his bolt on an empty chamber. With the safety off he squeezes the trigger as the instructor describes the "slack" portions, and the "squeeze" portions of the trigger movement.

Now that we have covered the "grip," "placing of the trigger finger," and the "slack and squeeze," we apply this knowledge in a "trigger squeeze sequence."

The shooter takes a normal breath, lets out a part of it and stops breathing. He then alines his sights, takes up the slack with a heavy initial pressure and continues to squeeze and increase the pressure steadily with his trigger finger tip until the rifle fires.

We use the "coach and pupil" method of instruction. Our coach places his finger on top of the firer's finger and squeezes the firer's finger, using the correct sequence. (Figure 6.) The coach then places his finger on the trigger. The firer places his finger over the coach's, and demonstrates his knowledge by squeezing the coach's finger, using

the correct sequence, until the rifle fires. This exercise is carried out in the preparatory field at the beginning of trigger squeeze training, but its use does not stop there. It must be carried out from time to time throughout the rest of his marksmanship training, including

the known distance range, the transition range, and frequently during firing at field targets during later stages of tactical training. Actually trigger squeeze should be discussed, demonstrated, and practiced at frequent periods *whenever* the soldier is to fire his rifle.

in the Department of the Army Supply Catalog ORD 7 SNL B-21. Its nomenclature is: "Aiming Device M2" for the M1 rifle. Figure 9 shows the device and how it is placed on the rifle. Old shooters will immediately recognize it as the Belgian aiming device, its early

Figure 6. The coach and pupil method is used to demonstrate and check proper trigger squeeze.

On our preparatory field we continue the trigger squeeze training, by requiring our pupils to practice correct squeeze habits, while in correct firing positions. (Figures 7 and 8.) Our coaches must be so located that they can closely watch the pupil's eyes and trigger fingers They must check the grip of the right hand around the small of the stock, and also the "sight picture."

To check the latter, an outstanding training aid is available for issue by Ordnance. It is catalogued

name. The pupil can see through the smoked glass and aim his rifle as usual. The coach, however, can see the reflected image of the entire sight picture. When the hammer falls the coach can verify the pupil's "call of the shot" because to the coach each shot will be a surprise shot.

Remember that each time our pupil squeezes the trigger he must "follow through." He must continue to apply pressure on the trigger after the hammer has fallen,

and he must continue to aim his rifle. He does not change his grip, the position of his head, and he doesn't bat an eye. He terminates his follow through by "calling the shot," that is, telling the coach exactly where the bullet would have hit the target. The coach can verify the pupil's call using the aiming device.

Figure 7. The coach must be in a position from which he can observe the pupil's eye and trigger finger.

Trigger squeeze exercises must be carried on conscientiously and slowly enough so that our pupils practice only correct habits. Haste, or squeezing the trigger too many times during the period, results in creation of "short cut" habits that undermine all the instructor is trying to accomplish.

Too often, calling the shot on the preparatory field is nothing more than allowing the pupil to say "center bull." This indicates slovenly performance and should be corrected by the instructor as soon as the habit develops. Actually, the best way to carry out the exercise is to issue each student a 1000-inch A target stapled to a plywood board. He can keep this board beside him and plot with a pencil the location of each call. The firer can plot his call by writing a number for each shot. If the coach agrees with the call he can circle the number. If he disagrees he can place an X and make the correct call. This aid to training also serves to slow the coach and pupil down, and provides a medium for discussing the correct call of each shot. At the same time the instructor can, by inspection, supervise the exercise.

When our trigger squeeze step is

Figure 8. Coach and pupil in the correct kneeling position.

completed on the preparatory field, we move to the fourth step of preparatory marksmanship, sustained fire. During all training in the fourth step great care is exercised to stress trigger squeeze. This care is exercised so that all prior training and establishment of trigger squeeze habits will not be undone. Stress the fact that sustained fire is nothing more than a series of slow fire shots executed without loss of time between shots. Trigger squeeze, therefore, is executed exactly as in slow fire. In each sustained fire exercise, the coach must carefully check to see that the firer keeps his finger in contact with the trigger between shots, and that he carefully squeezes and follows through each time the hammer falls.

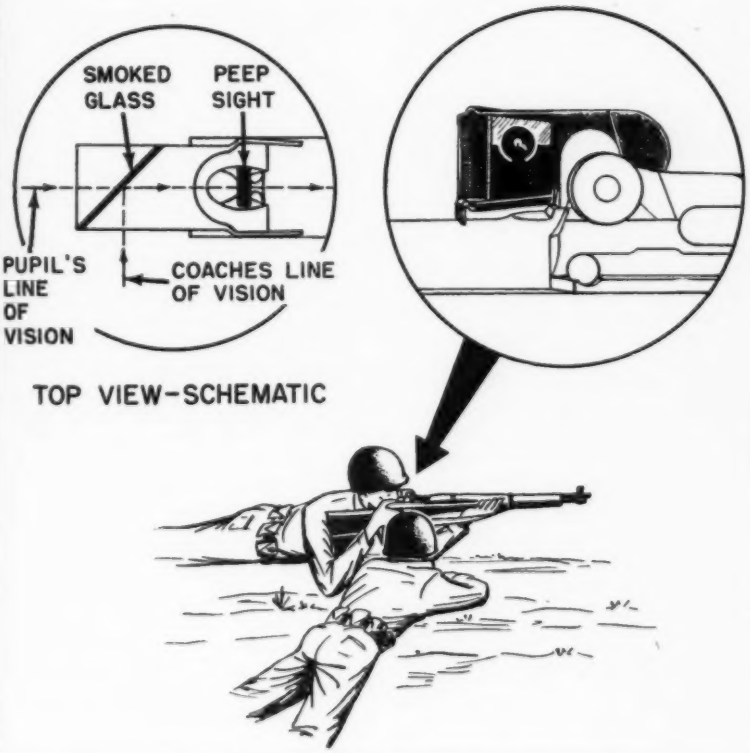


Figure 9. The M2 Aiming Device.

Upon completion of preparatory marksmanship training your unit will fire on the 1000-inch range. On this range *all* firing should be done using the ball and dummy method. In other words, when the coach and firer are ready to shoot, the coach has the firer turn his head and eyes in such a way that he cannot see the receiver of the rifle. When the firer's head is turned, the coach then loads either a live round or a dummy cartridge and closes the bolt. The firer releases the safety and employing the best of shooting habits carefully squeezes off the shot. By making frequent use of the dummy cartridge the coach can easily determine whether or not his firer is squeezing the trigger properly. The firer can easily tell whether or not he squeezes by his ability or lack of ability to call the shot correctly. If he fails to squeeze properly he will see the front sight dip well below the bullseye showing him that his shot, if a live cartridge had been in the chamber instead of the dummy, would have been a low four or three instead of a bullseye. Actually the firer learns much more about trigger squeeze if the coach makes considerable use of dummy cartridges, and only inserts a live round often enough to keep the firer continually expecting the rifle to fire.

During the 1000-inch firing the M2 Aiming Device should also be used, from time to time, by the coach to detect errors in sight alinement and trigger squeeze. Sometimes a new shooter attempts to "set the rifle off" at those rare times when the sight picture momentarily looks good. Unless this habit is corrected at once the firer becomes a confirmed "trigger jerker."

Sustained fire on the 1000-inch range should be carried out by loading the clips with a mixture of both ball and dummy cartridges, usually about 2 or 3 dummies in each 8 round clip. The shooter will quickly realize when he is jerking the trigger in an attempt to fire rapidly. Whenever the hammer falls upon a dummy the shooter calls the shot, performs immediate action, and continues to fire.

During this 1000-inch sustained fire most shooters will not finish firing all nine rounds; however, no scores should be recorded. Instead, record only the group diameters in inches and tenths of inches. Assistant instructors should have rulers for this purpose. No attempt should be made to rush the shooter to be sure he fires every round indicated by the drill schedule. Instead proceed at the pupil's speed and require a high standard of performance for each shot. Remember, a new shooter learns far more from snapping the rifle on dummy cartridges than he does from firing the live rounds. So it's wise to make generous use of dummy cartridges.

When the 1000-inch firing is complete do not stop using your dummy cartridges. Have them at each firing point on the known distance range — for use during instruction firing of the record course, and also have them on the transition range.

Remember the importance of *correct trigger squeeze*. Teach it in such a manner that it becomes a habit with each man. As a unit leader you must never forget that you are developing the inherent fire power of your unit to its maximum when you thoroughly ingrain good shooting habits in your men.

Airborne and the Atomic Weapon

By MAJOR JAMES K. COCKRELL, Infantry

EDITOR'S NOTE: *Now that atomic weapons are a matter of concern to Infantrymen, many new ideas on how this new striking force can be applied on the battlefield will be propounded.* THE INFANTRY SCHOOL QUARTERLY *is proud to act as a sounding board for these ideas, since new thought is the lifeblood of the Infantry.*

The views expressed in "Airborne and the Atomic Weapon" are those of the author and do not necessarily reflect the views of the Infantry School. You may not agree with the author — but can you come up with a BETTER *use for atomic weapons than in support of airborne operations?*

If so, let THE QUARTERLY *present your ideas to its reader-judges who, like yourself, may be intimately involved in atomic operations of the future.*

THE atomic weapon was made to order for airborne warfare. At first glance that statement may seem questionable; let's take it apart.

For purposes of this discussion, let's use a nominal bomb — a twenty kiloton (20,000 tons TNT equivalent) bomb exploded at approximately 2000 feet above the ground.

When such a bomb explodes, troops who are employed soon afterward in the same area will find that it has done two things that directly concern them; it has caused serious burns to the exposed skin of any people in the open within a radius of about a mile, and it has demolished (by blast) all but the strongest buildings in a similar radius. By using additional bombs these radii can be extended to cover any desired area. It is obvious that these two direct results carry with them many indirect results. The enemy's loss of key personnel, secondary fires, disruption of communications and utilities, panic and hysteria among the enemy are a few; however, the extent to which each of these effects will be present cannot be determined in advance. At the same time, there are some things that an air burst *won't* do, or at least won't always do; it cannot be counted on to destroy the major part of a military communication system, render most military equipment ineffective, or make anything in the area dangerously radioactive. In fact, the question of nuclear radiation is not of direct concern to troops who will enter the area of a bomb air burst soon afterward, because there is no significant radioactivity present after the first 90 seconds. In its effective area, then, the bomb can be counted on to cause a large number of casualties from burns and from flying debris. This casualty producing effect, in

turn, will drastically reduce the enemy's capability to resist attack for a period of hours after the explosion.*

In an airborne assault there is one critical period when the success of the operation is most at stake — it extends from the landing until the time the initial objectives have been secured, and command control of the assault force established. This phase of an airborne assault (whether the landing is made by parachute, helicopter, or cargo aircraft) contains three separate operations; the reorganization, the movement to initial objectives, and the attack of these objectives. Until it has reorganized from its landing groups into a tactical formation, a combat team (of whatever size) of an airborne assault force cannot attack effectively and can only defend itself weakly.

After its reorganization and during movement to its initial objective such a team is at its maximum effectiveness, *within itself*, but it as yet has little or no contact with other combat teams or the assault force commander, and therefore can expect little immediate help if it gets into trouble. Perhaps, in theory, DZ's are mutually supporting; but in practice they will usually be virtually isolated from each other during the first several hours of the assault. During that period each combat team is having its hands full getting organized and regaining control, not to mention fighting the enemy in a number of directions.

When a combat team *attacks* its initial objective a very critical point in the airborne assault has been reached. The combat team *must* seize the objective, because an initial objective is, almost by definition, one whose seizure is essential to the security of the airhead, and it must also seize the objective *quickly*, before the enemy can react from his surprise and either reinforce the objective or counterattack the combat team on its flank or rear. (There is no friendly front line as yet, of course; each combat team will usually be an isolated and independent force until well after the initial objectives are taken.)

Should a combat team find its initial objective to be a very hard nut to crack, it is in a somewhat unenviable position. It can expect little weapons support from higher headquarters, because all the available support except tactical air has already been attached to the various combat teams for the landing, and there can never be enough air to go around when all units are attacking. Although artillery is highly flexible and often may be massed in support of any one combat team if the situation so requires, it should be remembered that we are talking about the *initial* phase of an airborne assault. Furthermore, there is little chance of the combat team's getting reinforcements. True, the assault force commander will probably have a small reserve (not more than a battalion for a division) but the very nature of an airborne assault requires that he hold it out until there can be no question as to where it is needed most.

So, things can get a little rough in the first part of an airborne assault. And if the G2's are too far off, and the enemy has a big concentration

*Remember, we don't normally jump on top of front-line battalions. It is extremely doubtful that all personnel in rear areas spend their time in well-constructed holes with overhead cover.

in the target area, the entire assault force may have to be written off within a few hours after it lands.*

See how the picture changes, however, when the atomic weapon comes into play. Suppose one or more of these bombs are exploded over enemy troop concentrations in or near the proposed airhead, from five minutes to a half hour before the airborne assault force lands. (The time would depend on whether the landing was made at or near "ground zero," the unhappy piece of real estate directly under the explosion, or farther away; a dust cloud may hang over ground zero for a number of minutes after the blast.) No one will bother the airborne troops during their reorganization, with the possible exception of dazed enemy soldiers looking for someone to surrender to. No one is likely to interfere with their movement to the objective; most of the defenders who are still effective will be fully engaged in handling and caring for the large number of casualties, fighting fires, and controlling panic and hysteria on the part of civilians and troops. Those few who attempt to oppose the airborne forces will be hard put to gather enough men to put up effective resistance.

The situation at the initial objective will be little different. Because it is a key point, however, and the enemy has now had a little time to recover, some resistance can be expected. This resistance will certainly be only a fraction of what would have been met had the bomb not been used.

More latitude can be exercised in choosing objectives for airborne assaults under these conditions, because the presence of troop concentrations is hardly a serious threat when they can be neutralized by atomic bombs just before the assault. In fact, a new mission for airborne assault forces might well develop: to mop up the remainder of a huge reserve concentration after it has been A-bombed! Look at the characteristics of the atomic weapon and the airborne assault that point to their use together: both require surprise to be effective, both are delivered by air, and both require air superiority in the objective area. The bomb is a supporting weapon, capable of delivering a tremendously effective preparation at any desired point; airborne assault forces are ground combat forces, capable of delivering the attack to follow the preparation and thus quickly exploiting the situation created by the bomb at the point of delivery. And last, but certainly not least, the bomb can neutralize enemy tactical troops within its effective area for a long enough time to prevent their interfering with the airborne force during the critical period of its assault.

Of all of the uses to which the atomic weapon might be put, it is hard to imagine one for which it is more "made to order" than using it to pave the way for an airborne assault.

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*The British losses at Arnheim illustrate what can happen when an airborne assault doesn't get started right. See Major General James M. Gavin's "Airborne Warfare" for an account of this action.

They Can Work Together!

By CAPT. ALFRED PHILLIPS, Infantry

IT WAS raining again, and the neon sign above the "Joe the Vet Bar" blinked dimly through the mist. Fred Pieper pushed through the door, shook the water from his dripping, battered fedora, and elbowed his way through the crowd that lined the mahogany. He ordered a beer, and smiled as he listened to the usual argument on who won the Big War, and why. "Joe the Vet's" was the favorite meeting place for the neighborhood veterans, and this argument had raged for years.

"Tanker Tom" seemed to have the center of everyone's attention, and he was roaring into the red face of an angry man facing him.

"Infantry, my eye! Why, when my platoon was attached to that fouled-up battalion we led every attack. It didn't make any difference to that colonel what the terrain was like, or if the Germans had 88's or not. We went first. 'Hell,' he'd say, 'you guys got three inches of armor plate and my boys got nothing but a little old field jacket.' So what happens. He makes us go through a pass and we're ambushed. My lieutenant told him we couldn't maneuver there, but does he listen? Nah, and we lose three tanks in that many minutes."

"And there was the other time he wants us to go through a swamp. We knew we would get stuck and told him so. But he says to go ahead. So we go, and we get stuck. You should have heard him scream when we never reached the objective. You would have thought we did it on purpose."

The red faced man could stand it no longer. Slamming his glass on the bar, he began his reply.

"You tankers give me a good, swift pain. All I can remember about you guys is the excuses you had when you were supposed to support our attack. Either you ran out of gas, or you jumped a track or you were out of ammo. You make so much noise when you move around behind the lines that all you do is draw mortar and artillery fire. And as soon as the going got rough, you turned around to go back to your frauleins and Schnapps."

The argument raged for a while. Almost everyone put his two cents in, either for or against Tom. During a lull in conversation, Pieper decided to add his bit.

"It's a funny thing, but both of you guys are right. The Army had a lot of cases in the last war where the tanks and Infantry both failed to do their job properly. But they are doing something about that situation, trying to get better team work in combat. When I took that course at Benning, I remember them telling us that there now is a Tank Company organic to each Infantry regiment. This company has four similar platoons of five tanks each. They are medium tanks, mounting 90mm guns.

"Now, tanks and the infantry both have certain capabilities and limitations. Tanks are relatively invulnerable to small arms fire and shell fragments. They can go through wire and other anti-personnel obstacles. They have speed,

a lot of fire power and terrific shock action. But they are susceptible to enemy tank-hunter teams because of their limited vision. And because of their weight, they can't negotiate certain types of terrain, such as the swamps Tom mentioned.

"As for the Infantry, they can go through tank obstacles and over terrain that would stop a tank. They can knock out those tank-hunter teams and other anti-tank weapons. So, the big job is to combine both Infantry and tanks into a smooth working team where each counteracts the other's limitations and adds its strength."

Pieper paused to sip from the fresh glass of beer that Joe the Vet had placed before him. Tanker Tom seemed deep in thought, and turning to Don the Infantryman, he admitted that there were many instances where the riflemen saved his tank from "panzer faust" crews. Don magnanimously replied that he could think of plenty of occasions when the tanks turned the tide of battle. The conversation took a more friendly tone, and then Pieper continued,

"In order to get the best mutual support, they are emphasizing an Infantry-tank team consisting of a rifle company and a platoon of tanks. The tanks are attached to the rifle company, so the company commander is the team leader. This way tactical unity of each is maintained. Tanks train to fight as platoons, the Infantry as companies. The company commander gets recommendations from the tank platoon leader before making his plan. Then throughout the attack, keeps in contact with him by using his radio. With the new radios, the tank platoon could be on the rifle company command net.

"But that doesn't mean that all Infantry-tank teams are this size, or have to work this way. In specialized attacks, such as village fighting or in jungles, the team could be smaller — say, a platoon of Infantry and a section of tanks. And when the mission is basically a tank mission, as in pursuit to reestablish contact with the enemy, the rifle unit may be attached to a tank unit."

Don the Infantryman shook his head in bewilderment.

"Why all this fuss about attachment? As I see it, when an outfit has to make an attack, all you have to do is have the tanks and Infantry go together from the line of departure to the objective. You then have Infantrymen around the tanks to knock out any anti-tank guns and breach mine fields. And the tanks are right there to fire their machine guns and cannon on enemy targets. What could be simpler?"

At this, Tanker Tom blew his top again. Turning to Pieper, he said, "Is that what they are teaching at The Infantry School? If it is, someone should have his head examined. I can just about see those tanks creeping through a big, open field, held down to the speed of the Infantry. Why, speed is one of our best defenses against anti-tank weapons."

"No, Tom. They teach five basic ways that the Infantry-tank team can conduct an attack. The method to be employed will be determined for the most part on the terrain and the enemy. In selecting the method of attack, we want to take the greatest advantage of the basic capabilities of a tank — the speed,

terrific fire power and the shock action. Let me run through them briefly:

TANKS *ACCOMPANY* AND OPERATE WITH THE INFANTRY AT THE SAME SPEED

"This is the method that Don was referring to. The tanks and the Infantry cross the line of departure together, move to the assault position and assault together. Using this technique, control and mutual support is simplified. There is a favorable psychological effect on friendly troops having the tanks alongside of them. But the fire power and mobility of the tanks are not employed to the utmost because they are restricted to the rate of movement of the Infantry. So, this method will be used when control is difficult and visibility poor, such as in close terrain, woods, built-up areas or at night or in heavy rain or fog.

TANKS INITIALLY *SUPPORT* BY FIRE AND THEN MOVE FORWARD RAPIDLY TO *JOIN* THE INFANTRY FOR THE ASSAULT

"In this method, the tanks take up firing positions at or near the line of departure. The Infantry follows the best route to the tentative assault position, and when they deploy for the assault, the tanks join them and they assault together. In this method the tank's fire power, maneuverability and shock action are fully employed. You have accurate fire supporting the Infantry as they move to the Assault Position. In the assault, the tank fire is available when other supporting fire has lifted. Again we have that powerful psychological effect on both friendly and enemy troops — giving us more confidence while scaring the hell out of them.

"This method can be employed when the objective is clearly defined. There should be suitable firing positions for the tanks. The terrain must be suitable for the rapid displacement of the tanks. And this is important — time must be available for the necessary coordination between the tanks and Infantry. You want to avoid having the Infantry wait at the assault position for the tanks. It would be equally foolish for the tanks to wait there for the Infantry. Timing must be exact and communications must be maintained to allow for constant contact between the two units.

TANKS INITIALLY *SUPPORT* BY FIRE AND THEN MOVE FORWARD RAPIDLY TO *PASS THROUGH AND PRECEDE THE INFANTRY ON TO THE OBJECTIVE*

"In this method, the tanks again take up firing positions at or near the line of departure. They cover by fire the movement of the Infantry until it reaches an area well away from the objective. Then, supported by air burst or time artillery fire on the objective, the tanks overrun it and are joined by the Infantry who mop-up and reorganize. The characteristics of this type of an attack are the same as the one just covered. But this should be considered before using this type of an attack — the enemy should have hastily prepared defensive positions with little or no overhead cover so that he is susceptible to time fire. He should be weak in tank defense. So, we can attack this way when the enemy is

on the run and hasn't had the time to set up elaborate defenses.

TANKS AND INFANTRY *CONVERGE* ON THE OBJECTIVE FROM DIFFERENT DIRECTIONS

"Here the tanks and Infantry might cross the line of departure at different locations and at different times. Using different routes, and different assault positions, they meet on the objective and reorganize together. In this type of an attack, you use the speed and maneuverability of the tanks to the utmost. There is a certain amount of surprise achieved on the enemy when you hit him from different directions. But here are some weaknesses to this type of an attack. First of all, the Infantry does not have the supporting fire of the tanks either when they move from the line of departure to the assault position, or in the assault. The tanks are extremely vulnerable to antitank weapons as they maneuver over terrain not cleared by the Infantry or terrain where the Infantry cannot cover their movement. By separating the tanks and Infantry, control is difficult. So, you use this method when the terrain is such that it is better to temporarily split the team. Say, you have swamps that the Infantry can negotiate and find good cover and open terrain nearby that would be a preferable route for the tanks. And remember, here again the closest coordination must be made, and constant contact between units maintained.

TANKS SUPPORT THE INFANTRY BY OVERHEAD FIRE ALONE

"This is another method that we can use. Here, the tanks take up firing positions at or near the line of departure and cover by fire the movement of the Infantry to the assault position, and in its assault until its fires are masked. Using this method we take advantage of only one of the three basic capabilities of the tank, its fire power. This method should only be employed when there is a tank obstacle in our zone that forbids the tanks being employed any other way. Should such a situation exist, plans must be made before the attack for the movement of the tanks through the zone of adjacent units so the tanks can rejoin your unit as soon as possible. This requires coordination with the commander of the bordering unit or with the next higher commander.

"Now, in presenting these five basic methods for employing an Infantry-tank team, that doesn't mean that only one can be selected for an attack and followed through all the way. Again, the situation or the terrain might dictate modifying the method selected. It often happens that the tanks move forward by bounds to cover the movement of the Infantry to the assault position, and then join it in the assault. Or when we are in pursuit of a rapidly retreating enemy, you can have the Infantry actually ride on the tanks to permit maximum speed in movement. The only thing to consider in letting Infantry ride on tanks is that they are extremely vulnerable to enemy fire out on the tank's decks, and the traverse of the tank's cannon is restricted until the Infantry men jump off."

Pieper paused to take another sip of his beer. Tanker Tom, who had been nodding his head in agreement

at all that Pieper had said, then added this,

"All that you say makes an awful lot of sense. But if the rifle company commander is the leader of the Infantry-tank team you describe, he will have to remember that tanks require daily maintenance. He will have to give the tanks an opportunity to refuel and resupply. After the objective is taken and reorganization completed, the tanks should be withdrawn a few tanks at a time, or section echelon, to an area where resupply can be made."

Don the Infantryman then added his bit,

"If all this is going to work in combat, the tanks and Infantry should be trained in these team tactics here in the States. Each rifleman should be shown how to designate targets with his rifle by actually firing at a location and then having the tank clobber it with its gun. Or, have the target designated over the phone mounted on the back of each tank. Using the direction that the gun is pointing as 12 o'clock, the rifleman can use the clock system to point out the target. By running attacks together, we can work out a smooth running infantry-tank team."

Joe the Vet then moved up to our beaming trio. This air of mutual esteem and accord was new to him. Polishing the space before them, he said,

"All right, you guys, either drink up or shut up. It's getting late. Besides, who's interested in the Infantry-tank team? Now, take the Air Force. Let me tell you about that run over the Ploesti oil fields. There I was . . . "

"Three beers," interrupted Pieper, "and you told us about Ploesti before."

A fool can profit by his own experience but I prefer to profit from the experience of others.

Bismarck

Toward Better Intelligence

By LT COL OLIVER O. DIXON, Infantry

EDITOR'S NOTE: *In this article the author discusses a method for increasing the understanding of combat intelligence. The application of this method — the author feels — will increase the capabilities of regimental and battalion S2's.*

TOO frequently commanders fight battles by employing standard types of offense and defense without regard to the disposition and capabilities of the enemy and without taking advantage of the terrain. In some cases they have not been provided with these intelligence factors; in other cases they have failed to use them when available. Proper application of intelligence procedures permits the intelligence officer to furnish his commander with the capabilities of the enemy, an analysis of the terrain, and the probable action to be taken by the enemy. The commander's decision is sound only if he weighs these factors carefully.

Generally speaking, commanders of divisions and higher units are able to weigh more carefully the intelligence factors of an operation than can the commanders of smaller units. The higher commander usually has better trained intelligence officers and more time for them to produce timely and accurate intelligence.

Unfortunately, at regimental and battalion levels, faulty orders based on faulty intelligence or no intelligence often result in unnecessary casualties. It is in these units that intelligence must become more effective and be used to help make sound tactical decisions.

Combat intelligence has acquired an unsavory reputation, but producing accurate and timely intelligence in the battalion and regiment can change this reputation considerably.

Raising battalion and regimental intelligence from its low estate is a matter of education. At the Infantry School it is stressed that more training will produce more proficient S2's, and that greater proficiency will automatically promote greater prestige for the intelligence officer.

There is no doubt that the job has in the past been regarded with disfavor by many officers. Faulty concepts that have attached themselves to combat intelligence have caused prospective intelligence officers to make wide detours of possible S2 assignments.

These faulty concepts can be educated *out* of the student at the same time he absorbs desirable concepts. Instruction consciously pointed to-

ward this end can eliminate such ideas as: (1) that all intelligence is a result of cloak and dagger methods; (2) that an assignment as S2 is an indication of weakness on the part of the officer assigned; and (3) that the intelligence officer plays a secondary role and does not merit equal prestige with the other members of the staff.

More difficult to counter is the erroneous idea that, although intelligence has a vital role to play, there is not enough time to produce useable intelligence at battalion and regimental levels. If this concept has any justification it is in the "steamroller" type of operation that pushes forward, adjusting to any enemy reaction as it develops. Actually there are few situations when an intelligence officer can't pull his weight. At the very least he can provide the commander with the location of enemy weapons and with enemy strength and dispositions allowing the commander to make an effective fire plan and employ his forces to exploit enemy weaknesses.

After an attack is launched, the S2 continues to search for additional information to keep his estimate current, always looking for any change in enemy strength and disposition so significant as to warrant modifications of the original plan of attack.

A modification of old intelligence concepts and procedures further counters the lack of time factor. It is very easy to get the idea from current manuals that: a commander gets his mission and issues his essential elements of information (EEI) to the intelligence officer, who then plans his collection effort, sends out orders and requests, and receives information which is processed into intelligence for dissemination. This concept is valid and works well where time is not a vital factor. But short cuts must be taken at lower levels. The collection of this information must not depend upon announcement of formal EEI, rather, the EEI for an S2 are basic, except for special operations, and motivate a continuous search for obviously necessary information.

These basic EEI include: disposition, strength, and identification of enemy forces locally available and reinforcements; current enemy activity as clues to probable enemy action; terrain analysis; and other factors such as enemy morale and logistical support. Forms and paper work in general must be reduced to bare essentials and used only when they serve a definite purpose.

All of these factors have been kept in mind in the revision of instruction in combat intelligence at The Infantry School.

ROLE OF INTELLIGENCE

The Infantry School emphasizes the role of intelligence in staff planning by showing the intelligence factors considered in the commander's estimate. Forms for the intelligence estimate and the commander's estimate are placed side by side to show the direct contribution made to the latter by the intelligence estimate.

THE INTELLIGENCE PROCESS

The intelligence cycle, used for many years to show graphically the steps in the production of intelligence, is being replaced by the schematic presentation shown in Figure 1. The numbers preceding the fol-

lowing paragraphs refer to the numbers on Figure 1.

COLLECTION OF INFORMATION

(1) Intelligence is produced from information collected on the enemy, weather and terrain.

(2) An S2 enumerates and studies sources of information to assist the unit in taking its objective.

(3) While organic agencies gather a great amount of information, the S2 exploits *all* agencies that can furnish information. He learns the capabilities and limitations of each agency to determine which agency can best tap the appropriate source for the information required.

(4) His collection plan is simply a device to provide for a continuous collection effort; that is, a plan to insure that the right agency is selected to tap the source that can furnish this information. Many times the intelligence officer works out this plan without putting it in writing. However, no matter how

COLLECTION PLAN, 1st BN., 85th INF

BASIS OF COLLECTION EFFORT						ORDERS & REQUESTS	AGENCIES									REPORTING INSTRUCTIONS
FORCES LOC. AVAIL.	REINF. UNITS	EN. ACT.	TERRAIN	EN. STR. MORALE & SUPPLY	OTHER		A Co	B Co	C Co	D Co	RECT	ADJ UNITS	ARTY	OTHERS	PATROL PLAN	
	X	X				(1) Rept fwd mvmt of en units toward line of contact; especially along 1st Div and Marne Roads.	X[1]	X			(X)[2]	X	(X)			Positive info as obtained. Neg rept 1800.
X						(2) Loc, type, cal of arty in areas 9383, 9382, 9482, 9481.					(X)		(X)			Positive as obtained
		X				(3) Rept any increased patrolling in your area.	(X)	(X)	(X)			(X)				Same as (2).
		X	X			(4) Rept road blocks, mine fields, and obstacles on roads or likely approaches into en pan.	(X)	(X)	X		(X)					Positive as obtained. Neg rept by 2000
		X				(5) Rept any digging or const by units in rear of line of contact.	X	X			(X)		(X)			Same as (1).

Ed. Note: [1]The X indicates units considered, but not selected as an agent.
[2]The (X) indicates the unit has been selected as an agent.

Figure 1. The Intelligence Process

hastily prepared, a written plan is preferred. The Infantry School is teaching a revised collection plan that simplifies and minimizes the paper work involved in its preparation. This is shown in Figure 2.

PROCESSING INFORMATION INTO INTELLIGENCE

This step in the production of intelligence considers recording information, or the administrative

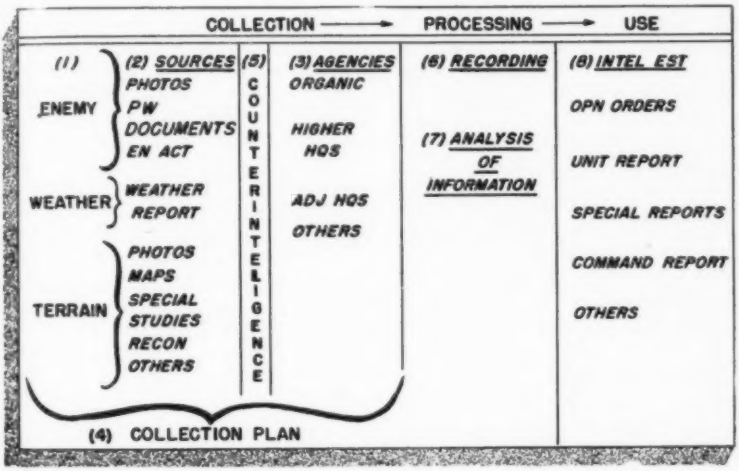

Figure 2. Collection Plan

(5) When our collecting agencies are unable to produce information, or when these agencies are deliberately given false information, it must be concluded that the enemy is employing effective counterintelligence measures. Likewise, if our forces use effective counterintelligence measures, the enemy will be uninformed as to our capabilities and plan of action. This counterintelligence concept is stressed at the level of instruction taught at The Infantry School.

routine of the intelligence section, and factors involved in transforming information into intelligence.

(6) The situation map and the work sheet are the primary instruments used in recording information. The S2 coordinates closely with the S1 to keep the intelligence portion of the unit journal current and accurate. As much of intelligence as possible should be shown on the situation map, including order of battle information and current enemy capabilities. A revised

work sheet conforms more closely to the organization of the intelligence paragraph of the unit report to help the intelligence officer make out this daily report. The S2 should keep only those files he needs currently; the official files are maintained as a part of the unit journal.

(7) FM 30-5 presents processing of information as a step-by-step mental procedure consisting of (1) evaluation of an item of information in terms of accuracy, credibility of source and/or agency, and pertinence to the operation at hand, and (2) interpretation of this information to determine its significance. This is a valid concept, but it has been The Infantry School's experience that students grasp the subject better when it is simply stated that information gathered must be analyzed and weighed in relation to the commander's mission. While pertinence, credibility, accuracy, and significance are used in discussing the processing step, they are not presented as special intelligence terminology.

USE OF INTELLIGENCE

Intelligence is of no value to commanders unless it is accurate and timely. Reports from Korea indicate that intelligence is not being disseminated to those who need it most. While command reports show that considerable intelligence has been available, it is frequently apparent that this intelligence was disseminated *following* the operation — rather than prior to the operation.

(8) Intelligence reaches the commander through an intelligence estimate. This estimate usually is given orally; when written, the estimate should be brief, showing graphically by overlay as much intelligence as possible. The intelligence annex to the operation order is rarely required at battalion or regimental level; it is more essential for special operations such as amphibious or airborne landings. When the enemy situation cannot be adequately presented in *paragraph 1a* of the operation order, an overlay type intelligence estimate may be used and referred to in that paragraph.

The unit report, normally submitted daily, is a composite report to which staff officers make their contribution. As stated above, the intelligence officer using his work sheet will have little difficulty compiling his portion of it. When time allows, intelligence should be disseminated to troops by sketches showing enemy dispositions, strengths, type of defense, fortifications, etc. A unit that is best informed of its opposition will fight more efficiently and with higher morale.

THE INTELLIGENCE OFFICER

The intelligence officer has staff responsibility for producing intelligence and supervising counterintelligence measures approved by the commander. This officer should be diligent, clever, and tactful. An exceptionally brilliant individual is not required. He should be well versed in the organization and tactics of our forces and equally versed in those of the enemy. The success of the S2 will be measured by his ability to collect information. It is in this regard that he must exercise diligence and ingenuity.

The intelligence officer cannot function without the support of his commander. Intelligence failures should not be condoned; the intelligence officer has the means to

gather information and to produce intelligence. If failure is due to lack of staff coordination and command support, the commander is the only man who can correct the situation; if the S2 is inefficient, he should be replaced.

TRAINING

Too frequently not enough attention is given to intelligence training. Also, the intelligence officer often has too many additional duties to permit him to devote full-time attention to his primary mission. Many times this is the fault of the intelligence officer, as he appears to have very little to do. If intelligence is integrated into all phases of tactical training by presenting realistic enemy situations, requiring personnel to report information and process prisoners and documents, the intelligence officer will have full time duty.

The commander whose estimates take into account the product of a good intelligence system is more likely to be a successful combat commander.

Service schools can produce officers with a good grounding in intelligence procedures. Their further development depends much on the commanders whom they serve as S2's. The commander who demands the ultimate from them and supports them in their assignment is most likely to have in his organization the intelligence system that provides a little extra assurance of victory — a commander who enters no engagement blind.

We have learned to stand shoulder to shoulder with men of other countries who share our concept of freedom and to fight for that concept in both physical and spiritual union.

General James A. Van Fleet

Combat and Training Tips

The following combat information and tricks of the trade have been extracted from Combat Training Bulletins published by the Office, Chief of Army Field Forces. They are reprinted here as background information that will be useful to the combat Infantrymen everywhere.

OBSERVATIONS MADE WITH INFANTRY-ARMOR TASK FORCE

Two hours were lost waiting for the tanks to arrive and during this period the Infantry unit commander made no effort to locate the tanks. More valuable time was lost in marrying-up the Infantry and tanks. No prior coordination had been effected between the commanding officer of the leading rifle company and the commanding officer of the tank unit which was to support him. (Senior commanders must issue orders sufficiently in advance to permit subordinate commanders to complete their own plans and detailed arrangements. Coordination, prior planning, and reconnaissance are absolutely essential in the employment of an Armor-Infantry team if maximum results are to be obtained. Team members must be married-up prior to occupying the attack position or arriving at the line of departure.)

NOTES ON CHINESE TACTICS

When the Reds attack our strong points, they never seem to attempt to break bodily into our position until our forces have about exhausted their ammunition supply and show it by their rate of fire. In fact, there is not a single instance in which enemy assault troops came over the top, overwhelming as much as a platoon. They do not crack positions with unusual valor or fanaticism, or by main weight quickly applied. They

squeeze our positions by a gradual buildup of numbers and firepower, and by patiently waiting for them to disintegrate as the defenders run out of weapons and ammunition.

TASK FORCES

Task forces cannot be constituted over night, nor can operational success be insured unless sufficient time is permitted for each echelon of command to make its own plans and effect coordination. Route priorities must be assigned and military police stationed to enforce them.

Any new force, composed of elements not in the habit of working together, must be afforded time to change frequencies, install the proper crystals, and check communications prior to moving out to the assigned mission.

COMBAT ORDERS

One of the common failings of junior leaders in combat is the issuing of incomplete orders. A battalion commander usually gave the prescribed five (5) paragraph order; the company commander might give a complete order; but there it frequently stopped. Platoon leaders and particularly squad leaders usually "sat" on the information. As a result, few of the fighting men knew the what, how, when, and where. Confusion resulted. Training and practice in good troop leading are important. Once junior leaders achieve this, the combat efficiency of the unit accelerates rapidly.

BATTLE OBSERVATIONS

Discrepancies observed in battle: a. Failure to use grenade adapters. b. Undue bunching after seizure of intermediate and final objective or while regrouping to continue the advance. c. Inadequate lateral coordination. d. Platoon and company commanders leading squads instead of maintaining positions from which they could exercise control of the entire unit.

HOLDING PERIMETERS

The importance of integrity of position was impressively evidenced by a comparison of losses sustained by units which withdrew under enemy pressure, and the units which had established defensive perimeters and held them until they could be reinforced by larger groups capable of defeating the attacking enemy forces.

Cohesion within units, and all of the things which it implies, is essential to all of the above. Without pride in unit, discipline, thorough training, and a constant use of the chain of command, the other principles cannot be properly applied.

The tenacity, resourcefulness, and determination which are essential to the accomplishment of mission in combat can never be present where unity and pride are lacking.

ENEMY TRICKERY

Many of the CCF speak English and pose as refugees or ROK units in order to pass through our machine gun fire lanes before being identified. On one occasion the leader of twenty CCF approached a UN defense position and shouted, "Okay, We're ROK's, okay, okay ROK's." The group was permitted to enter the defensive perimeter. Although all of the CCF were killed in the ensuing fire fight, it cost the lives of the UN Company Commander and five headquarters personnel.

The New 2 1/2 Ton GMC

By MAJ. JAMES A. PATTERSON, Infantry

AFTER the close of WW II, the Army entered into a period of intensive research and development. One important project was the design of a 2½ ton cargo vehicle that would satisfy the requirements of many type units. Past experience, advanced study, and intended use, contributed to the design of an interim vehicle, the M34*, built by Reo. This truck had complete waterproofing, a 24-volt electrical system, large single tires, and automatic front wheel drive engagement.

The latest addition to the Army's fleet of wheeled vehicles is a General Motors product, officially designated the "2½ ton 6x6 Truck M135." This truck is rapidly replacing the old World War II models and may soon replace the M34 (Eager Beaver) in many units. (See Figure 1.)

The M135 is equipped with automatic front wheel drive and two driving rear axles. Large 11.00/20 single tires provide greater floatation. Power is supplied by a GMC type 302, gasoline, six cylinder inline, valve-in-head engine.

A special GM Hydra-Matic transmission, mounted directly to the engine, has high and low speed ranges each of which has four automatic forward speeds and one in reverse. Speed selections are automatic after the driver places the control in the selected range position. This is the first cargo vehicle built for Infantry use that is equipped with automatic gear selection. A single speed transfer, mounted to the rear of the transmission, transmits power through conventional propeller shafts to front and rear driving axles.

An air compressor, mounted on the engine and driven by a crankshaft pulley, supplies air for the truck brake system as well as to trailer service connections. It may also be used to inflate truck and trailer tires.

The M135 has a soft-top cab with a metal cargo-type body mounted independently. The cargo compartment floor is broken by two large wheel wells (see Figure 1) which may pose a problem when loading bulky items.

The vehicle cargo capacity has not been changed, but a heavier towed load is permissible.

A Gar Wood horizontal drum type winch may be provided. Carrying 200 feet of ½-inch cable and having a 10,000-pound capacity, the winch may be operated by one man. (See Figure 2.)

A more powerful engine reduces the weight per horsepower ratio. The World War II model (carrying 2½ tons) had to pull 179 pounds per horsepower; the more powerful M135 has to pull only 136 pounds per horsepower.

*Described in "Your New 2½ Ton Truck," INFANTRY SCHOOL QUARTERLY, January 1951.

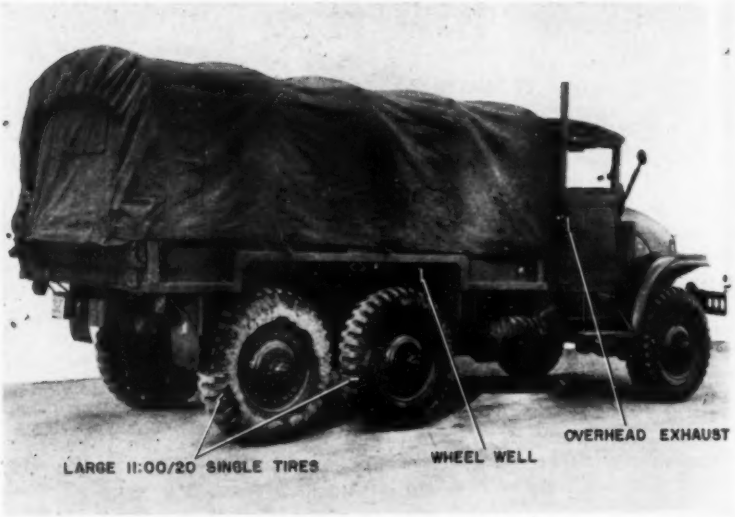

Figure 1. The new M135 truck bears a close outer resemblance to the M34 and it is still easily recognizable as a descendant of the World War II workhorse, the 2½ ton cargo truck. However, this new vehicle has features all its own. Note the overhead exhaust pipe; and the sharply sloping engine hood, permitting greater visibility. A drawback are the wheel wells, which project into the bed of the truck, cutting cargo capacity and presenting an obstacle to easy loading of bulky cargo.

The new vehicle has been operated on highways and cross country with and without towed loads, in convoy, and singly. The truck can maintain required road speeds for satisfactory convoy operation. The M135 is able to keep up with lighter vehicles with comparative ease, a distinct advantage over the older model. Fuel consumption in general is lower than was experienced with WW II cargo type vehicles. Operation in traffic and congested areas is superior. An improved overhead exhaust system reduces the noise so frequently associated with a heavy truck.

The maximum permissible load plus the towed load is moved readily wherever traction is afforded. There are no jerks or vibrations when the transmission shifts through the various gear ratios and obstacle crossing is facilitated by the smooth flow of power.

Operating the M135 requires special training. An experienced driver will have little difficulty in adjusting his habits to the new truck. However, certain precautions must be observed: this vehicle may be damaged if it is allowed to roll *forward* while the transmission is in *reverse* position or if the truck

is allowed to roll *backward* when in a forward gear.

Before towing a disabled vehicle, place the transmission lever in the N position, and the transfer lever in the DOWN-NEUTRAL position. The truck can then be towed without damage to its mechanism. However, the driver of the towing vehicle must keep in mind that brakes on the disabled vehicle may be less effective than normal, since the air pressure may be reduced or depleted.

The engine of the M135 can be started by pushing or towing the truck; however, the following instructions must be carefully observed to avoid damage to the transmission.

(1) Raise the transfer lever to UP-ENGAGED position.
(2) Place the transmission control lever in N HIGH RANGE.
(3) Use choke, throttle, and primer pump as for normal engine starting.
(4) Turn the ignition switch to the ON position. When a vehicle speed of 10-12 mph is reached, move the transmission control lever into the F-1 HIGH RANGE position.
CAUTION: Do not place the transmission control lever in the F-2 or in any LOW RANGE position.
(5) If the engine fails to start within a reasonably short distance, determine the cause and correct.

Only the emergency brake will operate without building air pressure. The emergency (parking)

Figure 2. The cab of the M135, like the M34, is broader than the cab of the 2½ ton cargo truck of World War II.

brake should be used when the vehicle is to stand for any period.

The M135 is a less tiring truck to drive than the M34. The seat adjusts to fit the conformation of the driver. Increased visibility, due to a larger windshield and slanting hood arrangement, allows the driver to see almost directly in front of the truck. Instruments are clustered in the center of the dash panel, affording a clear view at all times. (See Figure 3.)

The M135 fords 60 inches of water without using special kits. The installation of a special fording kit allows complete submersion of the vehicle.

M135 design facilitates maintenance. The power package (engine, transmission, transfer, and radiator) may be romoved as a unit. Two experienced mechanics can remove the entire power package in a little over an hour. This expedites the return of a vehicle to

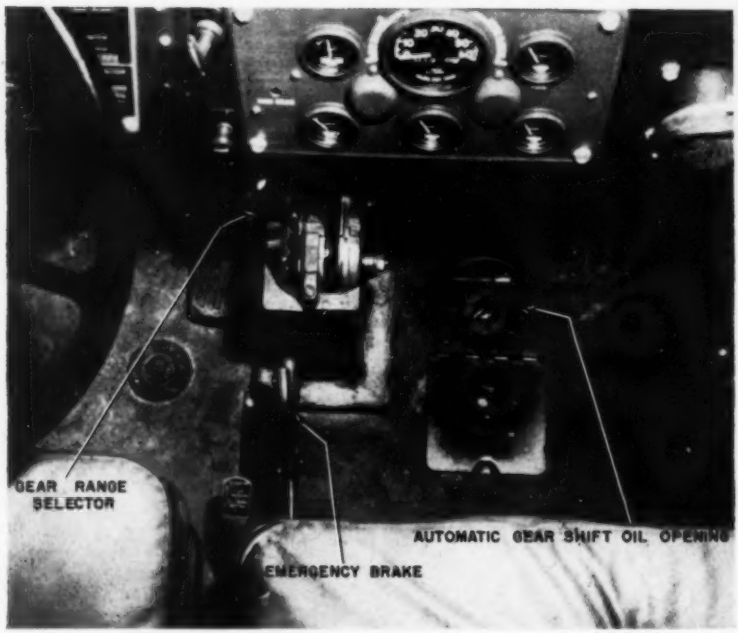

Figure 3. Interior of cab, M135 truck. Note, instead of the usual gear shift lever, a range selector box and lever. The circular opening in the floor permits the driver to check his automatic gear shift oil level without leaving the cab. See also Figure 4.

Figure 4. Driver checks oil level in automatic gear shift mechanism, M135 truck.

the user when the truck is referred to Ordnance for repair.

Another boon to using units is the increased interchangeability of parts. For example the front and rear hubs and brake drums are identical. The rear hubs can be assembled with either end out. The front and rear axle differential carriers are interchangeable, and so are many other parts. The hood may be raised to a vertical position, allowing the driver or mechanic free access to the engine compartment.

The Hydra-Matic transmission reduces certain maintenance requirements; smoother application of power should result in less wear on the universal joints. Increased tire mileage may also result. Scheduled services, however, must not be overlooked. Maintenance of this costly piece of equipment is highly important. (See Figure 4.)

The M135 will not solve all of our transportation problems. There are certain modifications to be made and others will become necessary as time goes by. Drivers assigned this vehicle require detailed instructions in its use and operation, for, although the advent of the Hydra-Matic transmission brings many advantages with it, the importance of driver training and

schooling of unit mechanics must not be underestimated. When properly used and cared for, the new M135 should prove worthy of upholding the reputation of the old "six by six," the "work horse" of the Army.

TABULATED DATA:

(a)	Vehicle Weight	
	Unloaded w/winch	12,740 lb
	Unloaded w/o winch	12,330 lb
(b)	Maximum payload	
	Highway operations	10,000 lb
	Cross country operations	5,000 lb
(c)	Maximum towed load	
	Highway operation	10,000 lb
	Cross country operation	6,000 lb
(d)	Overall length	267 in
(e)	Overall width	88 in
(f)	Minimum turning radius	35 ft
(g)	Maximum grade	60%
(h)	Engine horsepower (net)	133
(i)	Maximum road speed	58 mph

What's Your Decision?

By LT COL EMIL V. B. EDMOND

"WHAT'S your decision, soldier?" the tall lieutenant colonel asked rhetorically. Without waiting for an answer from his regimental officers' class he went on, "Without a doubt, we have all been asked this question at one time or another today. Perhaps it wasn't a direct question, but at least we have been confronted with a situation requiring us to make a decision."

"Making decisions," Colonel Morrison continued, "is important in our work; we can't be good leaders unless we make decisions. Some of our problems perhaps are as simple as deciding the best way of putting across a phase of instruction; others may be more difficult. But regardless of the simplicity or complexity of a problem, we reach a decision by following a thought process, either consciously or unconsciously. The better our thought process is organized, the better the resulting decision.

"As military leaders we are constantly confronted with situations that require us to make definite decisions. These decisions have to be correct. They often affect the welfare, and at times, even the lives of our men. Fully realizing this, the Army has developed a system of thinking which enables a commander to be reasonably sure he is making the right decision. This method, the *Commander's Estimate of the Situation,* is the subject of our discussion this afternoon." Colonel Morrison paused.

The class settled back. Colonel Morrison, commander of the 1st Battalion, was a solid soldier. What he would have to say would be worth paying attention to and grasping.

"Before discussing the commander's estimate," continued the Colonel, "Visualize a simple combat situation. Suppose a rifle company has been assigned an attack mission. Its commander takes his platoon leaders to an observation point and issues his company attack order. In his order he assigns a mission to each platoon leader. He orders Lieutenant Jones' platoon to seize a small hill, which is the left half of the company's initial objective 1000 yards forward of the line of departure.

"That puts a problem up to Lieutenant Jones. Now he must make a decision; he must decide how to use his platoon to accomplish the assigned mission. Let's follow his actions. First, Jones makes a visual or map reconnaissance of his platoon zone. He wants to learn as much about the enemy and the terrain as possible. He has to have this

information to utilize his platoon to best advantage.

"Now let's say Jones has completed his reconnaissance. He thinks to himself, 'I've got to take that hill. The enemy has good observation, but there's still enough concealment for me to sneak my platoon forward. There's one enemy machine gun and about a squad of men in our zone; the way he's organized he can defend against our attack. Of course, he can attack, too. Have to keep that in mind. I can move my platoon up that draw on the right, or I can move it through that wooded area on the left. If we attack up the draw, we'll have more cover and can get closer to the enemy position before being exposed to small-arms fire. If we move up through those woods on the left, we'll have plenty of concealment initially, but will have to cross that open area just in front of the enemy's main line. His position is strongest there. Looks like the terrain and enemy dispositions favor our attack on the right. I'm going to attack up that draw!

"Lieutenant Jones' thought process is an example of the commander's estimate in perhaps its simplest form. I have purposely used an example on the platoon level to show that the commander's estimate is as appropriate for junior leaders as for senior commanders and their staffs. It is applicable on all levels of command. The general idea that only higher commanders use the estimate is perhaps one of the most common misconceptions in the Army today. Your squad leaders can use it to good advantage; you should use it with your platoons, companies, and battalions.

"It is quite true that there is much more to the complete commander's estimate of the situation than the simple thought process followed by Lieutenant Jones. However, when we have discussed the estimate we will see that Jones did use all of the five basic paragraphs (See Figure 1). But as the size of the command increases, additional factors are considered under these paragraphs. This is reasonable since the success of an operation of a larger unit depends on more factors than does an operation of a smaller one. Our main objective this afternoon is to understand the purpose and use of the five paragraphs, or steps as you may choose to call them.

"If we had to define the commander's estimate very simply we could say that it is a logical thought process leading to choice of the most suitable course of action. Its purpose is to aid a leader in arranging his thoughts systematically so that he considers all essential factors.

"The commander's estimate," continued Colonel Morrison, "is designed for use by *all* military leaders regardless of the size of their command. It may be oral or written but is seldom written in units smaller than a division.

"As we go through the estimate's five main paragraphs, don't try to memorize the numerous sub-paragraphs. This isn't necessary. If you have to make a complete written estimate you will probably have a copy of the prescribed form available. My purpose this afternoon is to present to you the five *basic* paragraphs of the estimate and a few of the major factors considered in each.

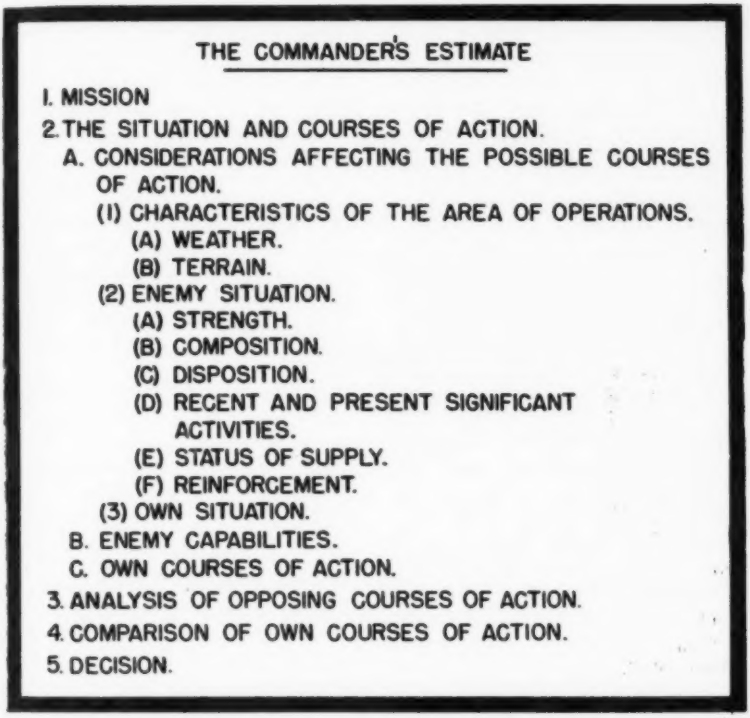
THE COMMANDER'S ESTIMATE
1. MISSION
2. THE SITUATION AND COURSES OF ACTION.
A. CONSIDERATIONS AFFECTING THE POSSIBLE COURSES OF ACTION.
(1) CHARACTERISTICS OF THE AREA OF OPERATIONS.
(A) WEATHER.
(B) TERRAIN.
(2) ENEMY SITUATION.
(A) STRENGTH.
(B) COMPOSITION.
(C) DISPOSITION.
(D) RECENT AND PRESENT SIGNIFICANT ACTIVITIES.
(E) STATUS OF SUPPLY.
(F) REINFORCEMENT.
(3) OWN SITUATION.
B. ENEMY CAPABILITIES.
C. OWN COURSES OF ACTION.
3. ANALYSIS OF OPPOSING COURSES OF ACTION.
4. COMPARISON OF OWN COURSES OF ACTION.
5. DECISION.

Figure 1. Abbreviated form for the Commander's Estimate. The complete form prescribed by the Joint Chief of Staff is more complex. It includes more factors for consideration, particularly under par 2a(1) Characteristics of the Area of Operation. These additional factors are those which must be taken into account at higher levels of command. For the complete form see par 75, FM 101-5, "Staff Officer's Field Manual."

"Now — what was Jones' first consideration in his mental estimate?"

The answer came from half a dozen attentive officers.

"That's right — his mission! He thought, 'I've got to take that hill.' Our *mission* must always be our primary consideration. That's why it is the first paragraph of the estimate and governs all our thinking leading to a decision. The remaining four paragraphs are developed with the mission in mind.

"During combat our mission usually is part of a tactical operation. However, we also have many missions to accomplish in garrison. For example, we may have to train our unit to fire all crew-served weapons. The commander's estimate is as helpful in determining the best method of doing this as it is in

choosing the course of action to accomplish a tactical mission.

"Always remember that before we can make a sound decision we must understand what has to be accomplished. This applies equally as well on all command levels. Don't ever lose sight of this fact — The mission is our primary consideration throughout the estimate!

"The second paragraph of the estimate is headed *Situation and Courses of Action*. This is where we consider all the factors — such as weather, terrain, and the enemy situation — which may help, hinder, or prevent us from accomplishing our mission. One of our greatest concerns is what the enemy can do to interfere with our plans.

"We analyze all factors and the results of this analysis guide us in determining which courses of action, if adopted, will result in the successful completion of our mission.

"Let's consider this paragraph in more detail.

"It's first major subdivision deals with considerations affecting the possible courses of action. Initially we are concerned with the terrain and weather characteristics of the operational area.

"We obtain and analyze the *weather forecast* to see what effect weather may have on the outcome of the operation.

"We've got to think about the weather because it affects mobility, observation, and close air support. Obviously it influences large unit operations more than those of a small one. However, it can't be ignored at any level. For instance, limited visibility may certainly assist a rifle company to conceal its forward movement during an attack.

"*Terrain* is the other characteristic of the operational area we consider in this sub-paragraph. We analyze it to locate critical terrain features, areas providing cover and concealment, obstacles to movement, and avenues of approach into the enemy's position as well as into our position. We also try to determine the extent of observation and fields of fire in the area. After this study we have a pretty fair idea of how terrain will affect the operation.

"Your plan of maneuver depends greatly on terrain characteristics. Remember how Lieutenant Jones, in his brief estimate, considered the approaches into the enemy's position? There were two usable routes in his area — one up the draw on the right, and the other through the woods on the left. Terrain favored the route on the right since this route would provide more cover than the one on the left. (See Figure 2.)

"The *enemy situation* is the next major concern in the subparagraph on considerations affecting the courses of action. Here we review our information of the enemy. We pay particular attention to his strength and the composition of his units. Also, we analyze his dispositions; that is, how he is located on the ground. Lieutenant Jones certainly gave lots of thought to the location of that enemy machine gun. He knew the woods offered some concealment but little cover from the machine gun's fire in the event his platoon were discovered. The draw on the right offered some concealment and, in addition provided cover for a much longer dis-

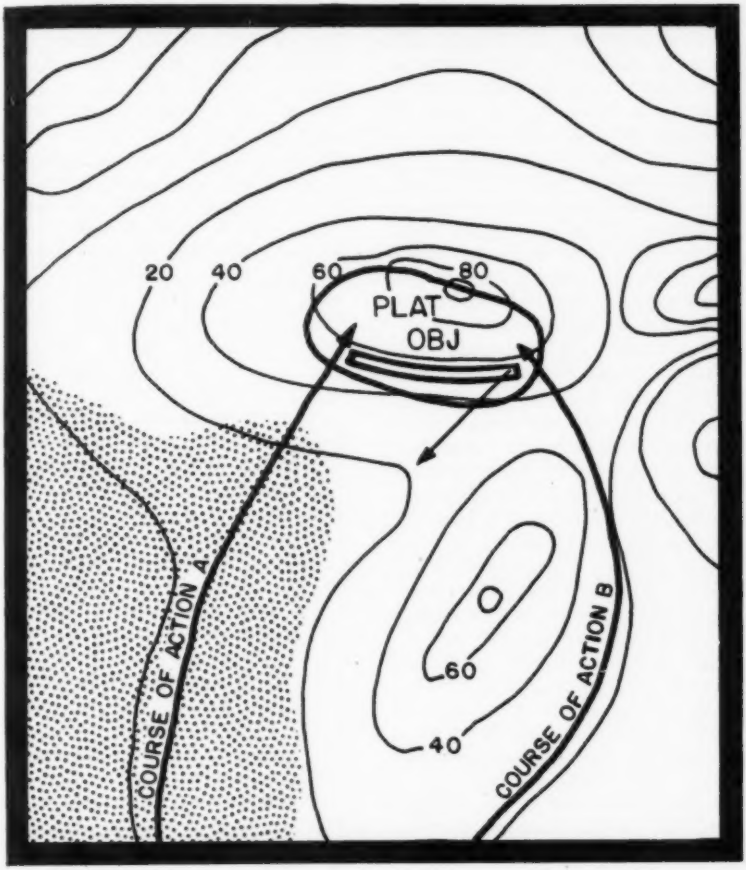

Figure 2. Possible courses of action in an attack situation (schematic).

tance on the way to the objective. The longer he could stay out of the field of fire of that machine gun, the better he would like it. He finally decided to make his attack along a route which gave his platoon the most protection from the fire of this gun.

"When we study the enemy we consider what he is doing. Formally, this is referred to as *'recent and present significant activities.'* Likewise, we review what information we have concerning the enemy's *status of supply*, as well as his ability to bring additional units — *reinforcements* — into the fight. These last three aspects of the

enemy situation are of more concern to battalions and larger units than to companies and platoons. The main thing to remember is that, when we make a commander's estimate, we carefully consider all available enemy information.

"The subparagragh on considerations affecting the possible courses of action concludes with a *review of our own situation.* Here we analyze the same factors used in the study of the enemy situation. However, this study is usually abbreviated since we are better acquaint with our own situation.

"When we have completed the analysis of the weather, terrain, and both the enemy and our situation, we enumerate the *enemy capabilities.* This is the second major subdivision of paragraph two. To do this we ask ourselves, 'What is the enemy capable of doing to interfere with the accomplishment of our mission?' When answering this question, we are careful *not* to consider his *intentions.* We are interested only in his *capabilities* because these cannot be altered as readily as can his *intentions.*

"After we have determined the enemy capabilities, we list them in the probable order of their adoption; that is, provided we feel we have sufficient information to permit us to do so. If we are not positive that our information is sufficient to warrant the establishment of a relative probability of adoption, it is wrong to establish one. In this case, we continue with the assumption that the enemy can initially adopt anyone of his capabilities.

"The last major subparagraph of paragraph 2 enumerates the *courses of action* open to us to accomplish the mission. We arrive at these from a study of the weather, terrain, enemy situation, and our situation. With the mission in mind, the commander asks himself, 'What can I do? When can I do it? Where can I do it?' The combined answers to these questions give the courses of action that are feasible. Naturally, since the mission is all important, any course of action that won't accomplish it is discarded. Likewise, we reject any course of action that cannot be executed within the limits of sound tactical doctrine, the means and time available, and under existing conditions.

"In some situations we may find there are quite a few courses of action worthy of consideration. However, if we carry too many forward for further analysis, our estimate becomes cluttered, thus confusing our thinking. No rule exists for selecting those courses of action to consider further. We must rely on our judgement, experience, and tactical knowledge. Normally, the number of courses of action worthy of further consideration can be reduced to two or three.

"A word of warning, gentlemen — the commander's estimate is not a formula into which we put certain information, perform the necessary mechanical computation, and come up with the correct answer. It will not think for us! The estimate is a thought process which *assists* us to analyze all essential factors before making a decision.

"Are there any questions on anything we have covered up to this point?" Colonel Morrison paused and looked around the room. One hand went up.

"Yes, Captain Snow, let's have your question."

"Sir," said the captain, rising, "I can see why a division commander should consider the weather, terrain, enemy, and so forth, but it seems like a waste of time for me, a rifle company commander, to go through all these. How should a company commander use paragraph two of the estimate in combat?"

"That's a good question, Captain Snow. Glad you asked it. My intention is to show how the commander's estimate can assist us, as small unit leaders, in making sound decisions and I want to know if I am not putting it across.

"In answer to your question — a rifle company commander considers only those factors that affect his situation. In his estimate, the company commander considers only those factors which affect his company's action. For example, weather, except in unusual circumstances, does not greatly influence the selection of a course of action for a rifle company. On the other hand, terrain does. The terrain and enemy situation always are included; others are used when they apply. Does that answer your question?"

"Yes, sir," Captain Snow replied, as he resumed his seat.

"In paragraph 2 of the estimate," continued Colonel Morrison, "we determined the enemy capabilities and our own courses of action. The next paragraph, number 3, is an analysis of these opposing courses of action. It is here that we visualize how each of our courses of action will come out when pitted against each one of the enemy's capabilities. We don't use enemy capabilities which will affect all our courses of action equally. If each enemy capability would have the same affect against each one of our courses of action they'd be no good in assisting us to choose one course of action over the other.

"This chart (Figure 3) helps us understand how we make this analysis of opposing courses of action. Notice that each of our possible courses of action is weighed against each of the enemy capabilities. This is perhaps the most difficult step of the estimate. Experience is of great assistance in this analysis. The process becomes more difficult as the size of the units involved increases. Logically, the third paragraph in a division commander's estimate is much more involved than that of a rifle company commander. However, both make the same analysis.

"The analysis of opposing courses of action may not have been evident in Lieutenant Jones' estimate. However, it was there. Jones visualized the result of both his attack on the left and on the right against the enemy defense capability. Actually, his paragraphs three and four were one. This is often the case when platoon and company size units are involved. The reason for this will be obvious when we have completed our discussion of paragraph four.

"The purpose of this analysis in paragraph three is to enable the commander to determine which factors should be given the greatest consideration in choosing the best course of action to follow in accomplishing his assigned mission.

"This brings us to the fourth paragraph of the commander's estimate. Here we *compare each of our own courses of action with the others.* We do this by considering the dominant factors developed in

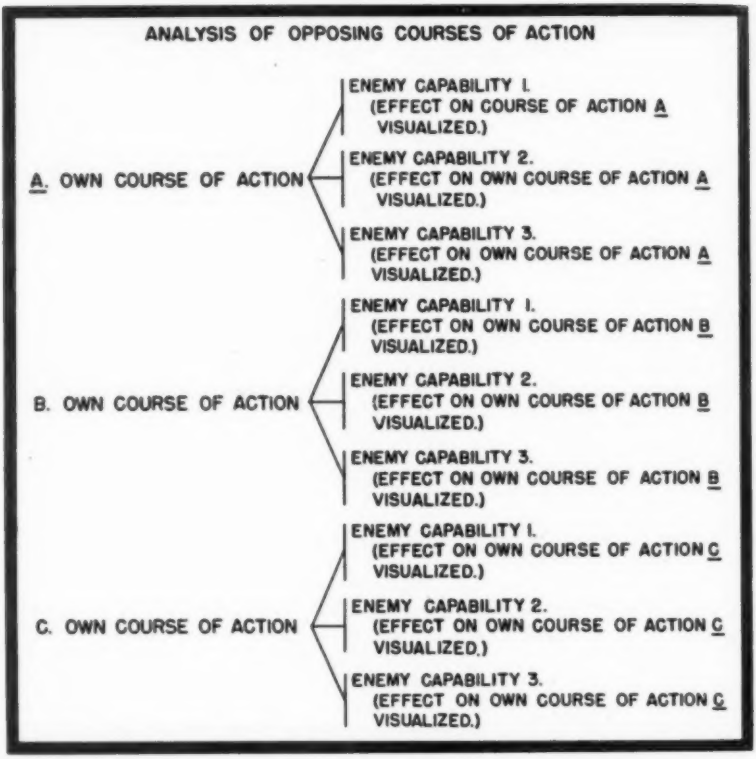
ANALYSIS OF OPPOSING COURSES OF ACTION
A. OWN COURSE OF ACTION
ENEMY CAPABILITY 1. (EFFECT ON COURSE OF ACTION A VISUALIZED.)
ENEMY CAPABILITY 2. (EFFECT ON OWN COURSE OF ACTION A VISUALIZED.)
ENEMY CAPABILITY 3. (EFFECT ON OWN COURSE OF ACTION A VISUALIZED.)
B. OWN COURSE OF ACTION
ENEMY CAPABILITY 1. (EFFECT ON OWN COURSE OF ACTION B VISUALIZED.)
ENEMY CAPABILITY 2. (EFFECT ON OWN COURSE OF ACTION B VISUALIZED.)
ENEMY CAPABILITY 3. (EFFECT ON OWN COURSE OF ACTION B VISUALIZED.)
C. OWN COURSE OF ACTION
ENEMY CAPABILITY 1. (EFFECT ON OWN COURSE OF ACTION C VISUALIZED.)
ENEMY CAPABILITY 2. (EFFECT ON OWN COURSE OF ACTION C VISUALIZED.)
ENEMY CAPABILITY 3. (EFFECT ON OWN COURSE OF ACTION C VISUALIZED.)

Figure 3. Compare each of your courses of action with each of the enemy's capabilities.

paragraph three. These usually include any or all of the following: terrain, own dispositions (how troops are located on the ground), enemy capabilities, enemy dispositions, and composition (number and type of own troops available).

"I don't want to leave you with the impression that these same five factors always apply. As commanders, we must determine which factors are the most important in our situation. Usually, however, we will find that the factors we consider dominant can be included under one of those just mentioned, terrain, own dispositions, etc.

"After we have chosen those factors which are most important in our situation, we are ready to compare our possible courses of action. Since we have chosen only those courses of action that will lead to the accomplishment of our mission, we must now determine which of these has the best chance of success.

When making the comparison we find that some factors favor a particular course of action while other factors favor a different course of action. Also we find that factors favoring one course of action also indicate the undesirability of one of the other courses. Those factors favoring a course of action are listed as advantages of that course; those which do not, are listed as disadvantages. (See Figure 4.)

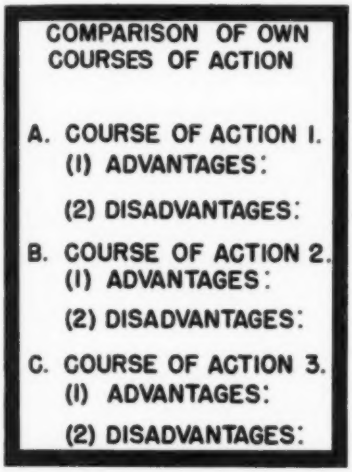

Figure 4. The advantages and disadvantages of each of our courses of action are considered.

"For example, let's assume we are comparing the possible courses of action with regard to the terrain factor. To do this, we analyze the terrain in each course of action. The characteristics of the terrain are noted. If these are favorable to a course of action, then terrain is an advantage of this course; if unfavorable, it is a disadvantage.

"In the same manner we compare the courses of action with regard to each of the other factors we have chosen. After we have done this we then are able to weigh the advantages and disadvantages of one course of action against the advantages and disadvantages of another. This is facilitated since we used the same factors in our analysis of each course of action.

"Let's go back to Lieutenant Jones' estimate for a moment. The dominant factors he used were *terrain* and *enemy dispositions*. In his brief paragraph four, Jones compared the courses of action open to him with regard to these two factors. Since cover and concealment are terrain characteristics important to a platoon attack, he considered these when determining which course of action terrain favored. Likewise, he compared the effect of known enemy dispositions on each course of action to see which course was better from that viewpoint. Lieutenant Jones was then able to determine how the two courses of action compared with regard to the dominant factors in his situation — terrain and enemy dispositions.

"The next and last paragraph of the commander's estimate is the *decision*. In any situation the decision should be that course of action which the estimate indicates has the best chance of resulting in the successful accomplishment of the mission.

"The basis for our decision should be paragraph four of the estimate. The first three paragraphs are designed to assist us in developing a sound paragraph four. A

careful study of paragraph four should indicate the best decision. In the rare event that two courses of action appear to have equal chances of success, we choose that one most favorable to future action.

"A correct decision is not reached by simply counting the advantages listed for each course of action and then choosing that course which has the most advantages. The relative importance of the factors considered in paragraph four may vary with each situation. It is only logical that one or more of these factors should be weighted more heavily than the others. There is no rule for this since the factors weighted will not always be the same in every situation. The relative importance we place on each factor depends on our judgment and knowledge of the situation. Our decision is definitely influenced by the relative importance we attach to the factors considered.

"When we have chosen the course of action we plan to follow, we state it in the form of a decision. This gives the staff a basis for its planning. A formal statement of the decision is not necessary in smaller units such as the platoon or company since we, as commanders, will do most of our own planning.

"A decision formally stated expresses the *who*, *what*, *when*, *where* and *how* of the desired action. It may express the *why*, when appropriate.

"The *who* indicates the unit that will perform the action. The *what* is the action to be taken — that is, attack, defend, and so forth. The *when* specifies the time the action is to begin. The *where* designates the area in which the action is to be taken. The *how* gives the general scheme of maneuver. The formation usually is described later when a detailed plan of action is developed. However, if it is desired to state the formation in the decision, the employment of each major subordinate unit is included. The *why* simply informs subordinate leaders of the purpose of the action. Basically, the decision specifies, in general terms, what we want to do with our unit.

"To complete the example of Lieutenant Jones — his decision was very brief; 'I'm going to attack up that draw!' That was a formal enough statement of the decision for his purposes.

"Gentlemen, that in brief is the commander's estimate. We have covered a lot of ground in a short time, and perhaps you may feel we have tried to cover too much. Although I have discussed the estimate in its complete form, I will feel our time has been well spent if you will remember, and use, the five major steps of the estimate. I want to repeat these again: first, know your *mission;* second, study the *situation* and *courses of action;* third, *analyze* the opposing courses of action; fourth, *compare* your own courses of action; and fifth, make your *decision*. Always remember, the guiding factor throughout the commander's estimate is the *mission*.

"The commander's estimate is basically simple and not new. Actually we use it every day without being aware that we are doing so.

In our profession we have to make sound decisions. This requires a careful mental analysis of all factors involved in the problem. The form for the commander's estimate,

which we have just discussed, facilitates this analysis.

"Remember, the commander's estimate will not think for you; it is a thought process designed to aid you in thinking. Use it at every opportunity! You will find it of assistance in every day life as well as in connection with military duties. Make its use a habit!"

Until new weapons and new military applications of atomic energy are available for field use, our national safety in the face of attack depends upon the improved conventional weapons, in ample quantity and with sufficient trained and equipped ground, naval and air forces to use them effectively. As the developments now in progress indicate that the scientific, technical and engineering problems are being solved, the new weapons are becoming complementary to conventional weapons, and will eventually replace certain types, to the ultimate improvement of our overall defense program.

The Honorable Robert A. Lovett

War in the Sub-Arctic

By MAJOR ANDERS GRAFSTROM, Swedish Army

EDITOR'S NOTE: *It is a little known fact that Sweden contributed a Volunteer Force of around 12,000 men to the defense of Finland in the Russo-Finnish War of 1939-40. In this article, Major Anders Grafstrom tells of how one company from this force conducted a long range patrol deep into Russian held territory.*

This article is presented because we feel it will be of value and interest to QUARTERLY *readers. It should not be interpreted as reflecting the thought of The Infantry School or the* INFANTRY SCHOOL QUARTERLY.

IN THE winter of 1939-1940, a Volunteer Corps of 12,000 men recruited, organized and supplied in Sweden fought side by side with the Finnish Army on the frozen wastelands of Northern Finland. This Volunteer Corps was composed mainly of men who had performed their military service in the Swedish Army. In February 1940 it was assigned the mission of defending Finland north of the line Oulu-Paanajarvi. The Corps Staff* was located in the town of Rovaniemi.

The Russian attack on Northern Finland at this time consisted of one Russian division moving south from Petsamo, and two Russian divisions moving west on the Salla-Rovaniemi road (See Figure 1). The northern threat, the 104th Russian Division, was contained by one battalion of Finnish troops. On the road Salla-Savukoski were two Finnish battalions facing the 88th Russian Division. On the main Salla-Rovaniemi road, a Swedish force of two reinforced battalions (a "group")** faced the 122d Russian Division.

In February 1940 the 122d Russian Division was halted at Markajarvi. Here it brought up supplies and prepared for a new advance. The Swedish force was not idle at this time. It was also preparing to take the offensive. One step in this preparation was to reconnoiter the territory northwest of the Russian force for a route upon which to move to attack its rear. The reconnaissance company of the 2d Battalion*** was selected to perform this task.

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*The chief of this staff is the present commander of the Swedish Defense Staff, Major General R. Akerman.

**The chief of staff of this group is the commanding general of the Swedish Army, Lieutenant General C. A. Ehrensvard.

***The battalion commander is the present commander of the Swedish Army Staff, Major General V. Tamm.

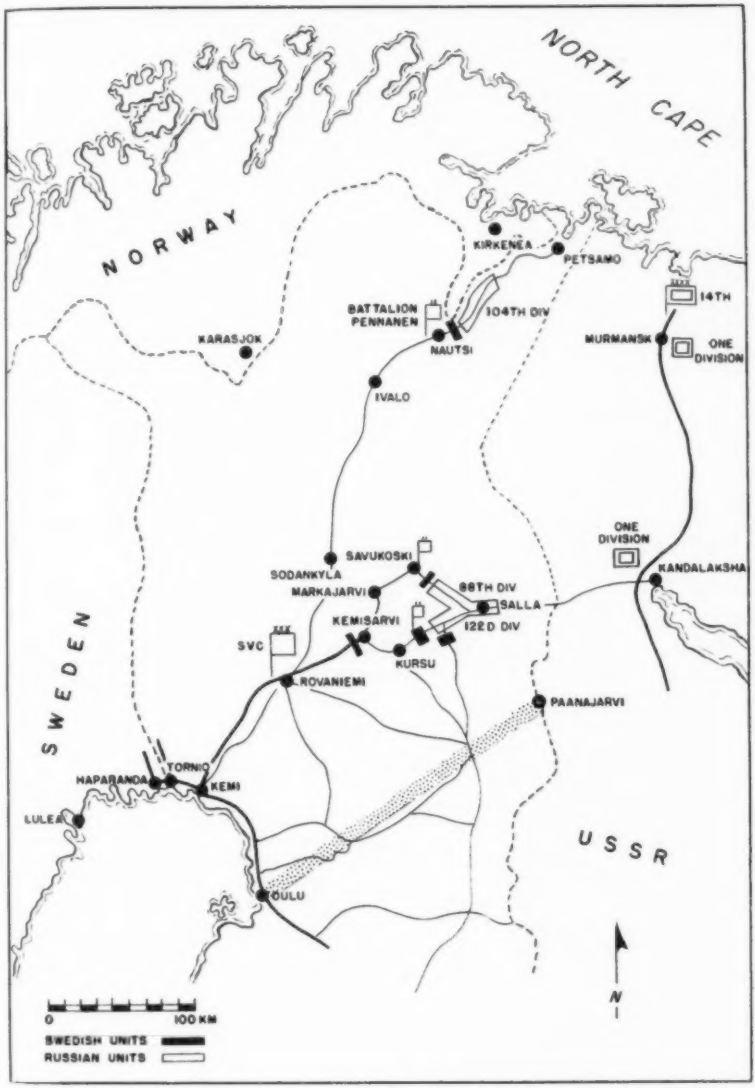


Figure 1. Situation in Northern Finland in February-March, 1940.

On the morning of 1 March 1940 the reconnaissance company was assigned the following mission: (See Figure 2.)

1. Reconnoiter a route of advance for two battalions complete with heavy weapons, north of the line Salmijarvi-Termusjarvi-Matovaara. (The reconnaissance battalions must remain hidden from enemy ground and air observation.)

2. Determine whether enemy units are located in the woods northwest of Sarviselka-Matovaara.

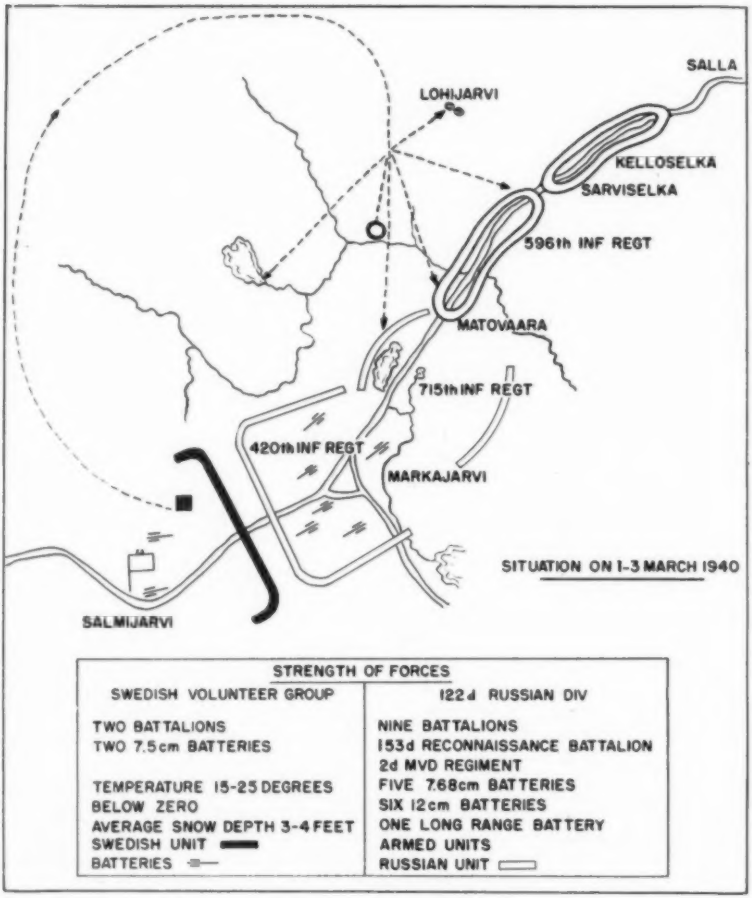


Figure 2. Situation on 1-3 March 1940.

3. Report on and harass the traffic on the road from Markajarvi to Salla for no less than a 24 hour period.

To accomplish this mission the company commander decided to use the company staff and two platoons, a total of about 90 men. The remaining platoon had been on an exhausting reconnaissance patrol the previous day and night and could not be used on another strenuous mission immediately.

Three days dehydrated food and dried milk were taken. To protect against cold, two tents with stoves were brought along. A radio for voice or code communication with the battalion was an essential part of the equipment. As much ammunition and explosives as possible were packed with the rest of the equipment and loaded on "akhios." (See Figure 3.)

The reconnaissance company commander had detailed information about the enemy. His rangers had previously contacted Russian patrols and guard detachments. The plan of the company commander was to take advantage of daylight by moving the company to the edge of territory under Swedish control. Up to this point, his men would be screened from possible contact with Russian sentries or patrols by Swedish reconnaissance elements and heavily wooded heights. At dusk the company was to make a wide sweep and come from the north into the outer lines of the enemy.

In the afternoon, after all preparations were complete, the march to the reconnaissance area started. The temperature was around 10-12 degrees below zero. The surface for skiing was good, although the intense cold reduced the sliding qual-

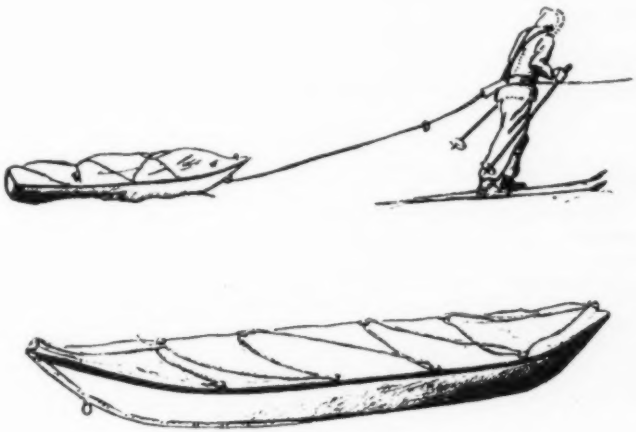


Figure 3. Akhio.

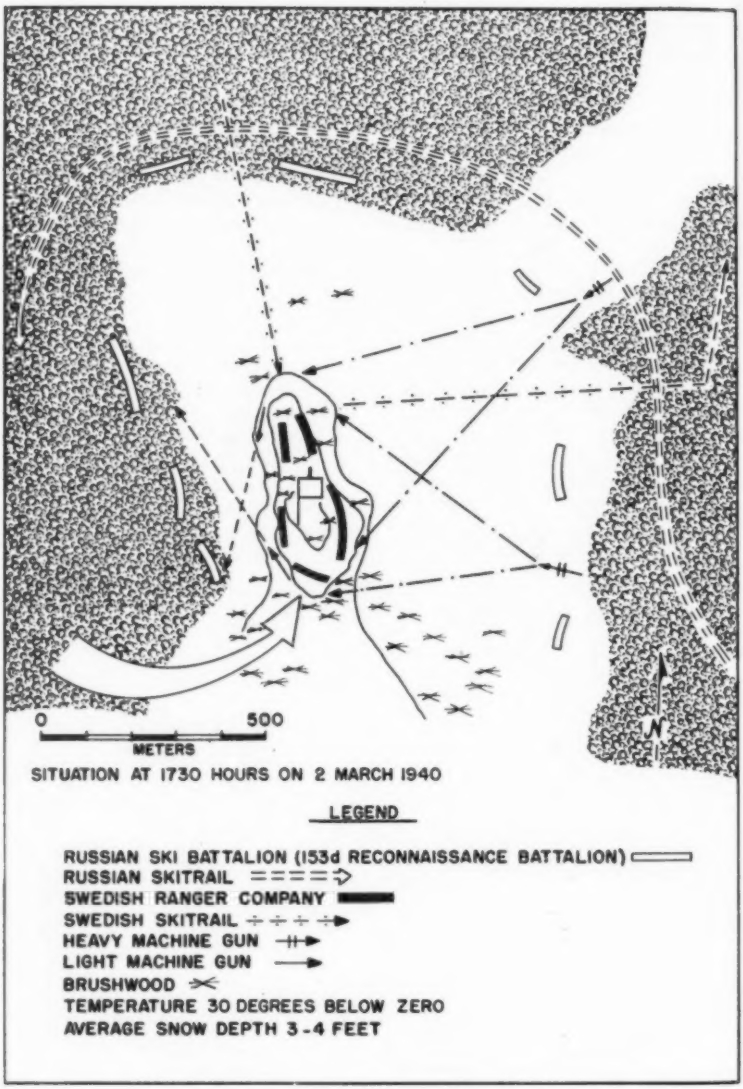


Figure 4. Situation on 2 March 1940.

ity of the snow. The advance was tiring because of the loose snow and several ridges that had to be crossed. After nine hours of continuous skiing — with only short halts to check direction, for liaison, and for relief of the men pulling akhios — the company reached the final assembly point at 0230 hours (See Figure 4).

In front of them the rangers occasionally saw searchlights. Investigation proved them to be truck headlights. This indicated the unit was not far from the enemy's lines of communication.

The assembly point was in a thicket surrounded by open fields except to the south and southwest. Here it was connected by thinly grown underbrush with a large woodland. The route of advance came into the thicket from the north. Guards were sent out in all directions and the two tents set up. Warm drinks were served and the members of the unit not on guard had a few hours of rest.

At 0300 the first patrol was dispatched to observe the traffic on the Markajarvi-Salla road. At 0430 patrols set out to reconnoiter the woods at Sarviselka and Matovaara. At 0700 a patrol under command of an officer started towards Sarviselka. This patrol was followed shortly afterwards by patrols going in the direction of Lohijarvi.

These patrols reported, upon their return, that fortifications were being constructed in the neighborhood of Sarviselka. They also reported that intensive enemy activity was seen in the woods in and northwest of Matovaara, that bombers (Sb 2's) were stationed east of the southern point of Termusjarvi lake, and that fighters had taken off and landed on a frozen swamp east of the lake. The traffic on the main road was accurately reported. The company commander now had detailed reports of the movements and the activity of the enemy. New patrols were sent to continue the reconnaissance and to prepare for harassing activity during the next night.

The rest of the reconnaissance company had not been idle during this time. The platoons had fortified their positions for defense in event the enemy discovered them and attacked. The wisdom of this move soon became apparent for they were discovered at 1300 hours. An enemy unit of about 60 men crossed, stopped and carefully examined the ski trail the company had left when it came to the position from the north. The company's observation post reported that the skiing ability of this patrol was remarkably good. The company commander noted that the enemy patrol, clad in white camouflage clothes, showed complete familiarity with their skis, something not very common among the Russian troops.* The enemy sent a detachment in the direction of the company (from all appearances they did not suspect the company was so near). The company commander planned to capture this detachment without firing. His plan failed when one of his men extinguished a fire by throwing snow on it. This ac-

*The author is, of course, speaking of the Russian ski training at the time of this action.

tion caused a pillar of smoke to rise above the tree tops announcing his presence to the Russians, who halted and began to turn. "Fire!" the company commander ordered and the enemy detachment was annihilated.

The main enemy unit immediately placed guards alongside the trail. The enemy then continued about 500 meters northwestwards and moved into position in the woods west of the company. The enemy accordingly was both north and west of the company, the only possible directions of withdrawal during daylight. Finally Russian messengers were sent to the south, towards their main force.

One hour later about 60 more enemy soldiers followed the first group and reinforced it north and west of the company. At the same time it was reported that approximately 70 men were moving to the east. The reconnaissance company was blocked on the north, east and west, with the main Russian division to the south.

Russian snipers opened fire against any target that showed. The Swedish rangers (reconnaissance company) quickly developed respect for their well aimed fire. It became necessary to make the utmost use of the terrain for cover and shelter, which hindered the company in its communication and other activities. The men could move only by crawling or pushing through the snow.

Two machine guns soon began a steady fire from the east and northeast. The enemy's automatic rifles also opened fire, but their elevation was high and their shots passed harmlessly overhead. The rangers were ordered to hold fire until the enemy came within 200 meters. The company could not afford to waste ammunition. It was essential that every shot hit its target.

The southern machine gun was becoming dangerous and had to be silenced. A platoon leader asked the reconnaissance company commander, who stood at this side, for permission to shoot the machine gunner. The company commander said yes. The platoon leader then borrowed a rifle from one of his men, estimated the distance as about 500 meters, adjusted the rear sight, aimed and fired. (The company commander watched using binoculars.) The machine gunner collapsed. His comrades pulled him away and another man of the crew manned the gun. The platoon leader fired another shot. Once more a perfect shot, and the machine gun was silenced for the rest of the day.

The fire fight continued. Each time the enemy tried to advance, he was repulsed with heavy casualties. The reconnaissance company had several killed and wounded.

About three hours later, at 1630, the Russians again received reinforcements (150 men) bringing their strength to 400. They commenced reorganizing for an attack from the west. Preparations were made by the reconnaissance company to meet the expected attack. The company's light machine guns were arranged for flanking fire and all men with submachine guns were moved to forward positions. Trails were stamped out in the deep snow for the counterattack. By so doing, the counterattack could be launched as late as possible and would surprise the Russians who would be plodding heavily through loose, deep snow (See Figure 4).

At 1800 two red flares went up — the signal for attack. The enemy advanced cheering loudly. The main attack came through the brushwood to the south of the company. At first the attack gained terrain. However, it was soon stopped by the Swedish counter-attack, which succeeded in penetrating the enemy's formations. The combat turned into hard hand to hand fighting, and more than 200 of the enemy were finally killed.

By examining captured enemy documents it was possible to identify the attacking unit as the 153d Reconnaissance Battalion, a Siberian-trained ski battalion. All of its arms (submachine guns, automatic rifles, light machine guns), ammunition (which included explosive rifle cartridges), and other equipment (dehydrated food, electric pads, etc.), were loaded on the akhios to be taken to the company CP. Documents taken from dead Russians showed that three companies from the battalion had taken part in the attack. Seven Swedish rangers had been killed.

The problem now was to make the most of the success and to disengage the company. The company's mission was complete. To survive, it now had to withdraw from action and return to its own lines. The wounded had to be given care and returned to safety, for at any time the enemy was likely to receive more reinforcements. If possible, combat had to be avoided. Any combat in the dark, against an enemy on "home ground," is a risky enterprise.

To withdraw the shortest way — to the west — would lead the company into the enemy's patrol system. Movement to the south would mean a leap into his main defense positions. To the north was the balance of the battalion with which the company had just been fighting. To choose the latter was to walk into another fight.

About three kilometers to the east, in the opposite direction from the Swedish lines, were enemy camp sites. The reconnaissance company commander thought it most probable that the enemy would be less on its guard in that direction. He decided to move eastwards and turn to the north after a march of one kilometer. The order of march: advance platoon, wounded, "war booty," rear platoon.

The withdrawal succeeded.

After seven hours of marching with no incidents of note except the annihilation of a small Russian patrol, the company halted and the men served a warm drink. It was the first warm food for nineteen hours. During this time the company had reconnoitered and fought for twelve hours and marched for seven.

After the rest the march proceeded. The company had already suffered much from mental and physical strain. The move through the loose snow with heavily loaded akhios in the cold (the temperature had dropped to 30 below zero) was the final test of its energy and determination. In spite of the fatigue and weather the morning of the 3d of March found the men safe at their camp site and all wounded repaired.

The mission of the reconnaissance company was accomplished. The Russians special ski-battalion of the 122d Division had been severely hurt. The cost was a total of ten Swedish lives.

TIPS ON SUB-ARCTIC WARFARE WEATHER

Winter in the sub-arctic is easier and at the same time more difficult for reconnaissance. The snow, the ice-bound lakes, swamps and water courses assist the advance, but the same advantage applies to a well equipped adversary, trained for sub-arctic duty. The snow facilitates detection of enemy movements, as ski-runners and vehicles of all kinds leave easily visible tracks behind them. The cold forces the enemy to construct extensive camps. These more or less illuminated bivouacs reveal his presence as do his motors which are kept running to keep them from freezing.

TROOP CARE

A unit must not be exhausted when moving towards its objective. The troops must be kept in good physical and mental condition for action with the enemy and for the return from combat, which is generally more difficult. One must keep in mind that the weakest man in a unit decides its speed.

TRAIL DISCIPLINE

Patrols arriving and departing must not make separate trails, revealing the location of the unit. In this action the trail on which the company advanced was followed for about two kilometers before the patrols went off to their different destinations. If possible, the same trail should not be used on the return from a patrol. All unknown trails must be carefully examined and reconnoitered, especially when trying to surprise the enemy.

CONCEALMENT

To conceal the strength of a unit it is often advisable — especially when the snow is new fallen — for the men to use the same skipole marks, or occasionally to ski without employing their poles. A reconnaissance unit should always lift its poles when passing across lakes, swamps and open fields and when close to the enemy, particularly when the crust of the snow is hard. If this is done the movement will be noiseless and the enemy sentry will not hear the crunching of the sticks and the measured strokes of the skis on the crusted snow.

TRANSPORTING WOUNDED

Akhios, or similar conveyances, must always be brought along to avoid leaving wounded behind. Frequent stretch-stops for wounded are necessary. The danger of frost bite during transport is great. The wounded, their strength permitting, must be allowed to move about to keep their blood circulating.

IDENTIFICATION

There must be, between patrols leaving a defended area and the guards remaining, complete understanding as to the signs and signals (passwords and countersigns can change while the unit is on duty) so that the patrols can return safely through their own lines. These signs and signals should be known by the units on guard along a sufficiently wide front (and even on the flank) in order that the reconnaissance units, when returning, are not limited to fixed times or places of entrance.

The P T Test

By LT PALMER S. McGEE, Jr., Infantry

NEVER underestimate the value of physical preparedness. Technical training is wasted effort if physical training is neglected to the point where troops are too fagged out to put their mechanical and tactical know-how to work in the test of combat.

Getting there "fustest with the mostest" means nothing if the mere effort of getting there leaves the speedster in no condition to fight.

From a nation that once earned its daily bread by arduous physical toil in fields and factories, that once kept legs in shape by hiking from home to job and back again, we have become a nation of desk-sitters, machine-tenders, and car-riders.

While our highly trained athletes set new records for speed and endurance, the great mass of our people has become onlookers; and the Army is a cross section of our population. In mediocre physical condition on entering the service, too many of our soldiers progress but little physically since, in our struggle for technical perfection, too many units stress physical conditioning less and less.

The results show up in many Korean combat reports that tell of fighting ability impaired by our troops' lack of physical stamina. Most men know they should get themselves in good shape for combat but few take it upon themselves to work out and get in condition. It takes a planned physical conditioning program — a compulsory program — to do the trick.

Surveys at The Infantry School show that even in classes where 90% of the students are on Far East orders, less than 5% are voluntarily attempting to condition themselves. Officer classes are no different from NCO classes. It isn't that men don't want to improve physically, it's simply that there are too many more pleasurable activities than the strenuous calisthenics and arduous running that build muscles, endurance, and wind.

PT PROBLEMS

Physical training receives the short end in training programs for several reasons. Some commanders feel that normal training alone will put everybody in good condition. True, some troop training provides enough strenuous activities so that PT can be sharply curtailed. For the most part, though, the unit training program is not consistent enough in its physical demands. It does not reach with adequate frequency all the muscle groups of the body, and it does not develop the stamina that physical proficiency requires.

Scheduling difficulties often short-change PT. Scheduling PT is too often either an S3's Nemesis or godsend, depending on how he looks at it. PT can't be scheduled

as a block — three full days and then "Bingo!" cross that subject from the schedule. It can't even be scheduled in full afternoon periods. Instead, it falls into the same category as I&E, Drill, and Military Courtesy — these fillers plug the gap after all the block subjects have been scheduled.

Too often the S3 will argue that "The two-thirds of a period needed to move from Training Area B to Athletic Field 4 is exercising, isn't it?" He's right, but often in a very small measure.

Scheduling PT isn't simple. S3's and commanders have to realize its value and doggedly schedule a well-planned *progressive* program, not once in a while, but regularly throughout all training phases. At battalion level and above, commanders and responsible staff officers must allot sufficient and appropriate time for physical training. A program can be conducted more easily by frequent reference to *FM 21-20, Physical Training* and adherence to a sound subject schedule such as Subject Schedule 64, published by Army Field Forces.

In some cases the value of the PT period is lost because commanders don't plan the conduct of the period. Some thought should be devoted to what activities each period is to include and how it is related to the following one in an increasingly intensive program. *FM 21-20, Physical Training* is the bible that guides the conscientious commander along the paths of PT righteousness.

Even these precautions won't produce all the progress desired. The final touch is added when the trainee feels he has a goal to work toward. This is provided by the physical fitness test. A yardstick to measure progress, it provides an incentive for the individual and the unit undergoing the conditioning process.

ROLE OF THE PT TEST

Although this test is not new (it first appeared in FM 21-20 in January 1946) it still is not in Army-wide use. If its value were more generally recognized its use undoubtedly would increase.

The physical fitness test serves several purposes:

It discloses the condition of the men when given to a unit initially, and indicates what kind of build-up should be stressed.

It shows the commander the progress of his troops. Through successive tests the effectiveness of the physical training program can be measured. When there is not a marked improvement over a three-month period, except when the men have already reached an advanced degree of conditioning and are in the sustaining stage, the PT program should be investigated.

It shows the individual how he improves.

It presents an incentive and the spark of competition. Men don't like to be classified as weak. They will work hard to avoid being in the lower brackets of their company physically. On the other hand, a man who is strong likes to have his prowess recognized. He will really "put out" to make the top score or rank high in his company. If credit is given to those showing the greatest improvement, as judged by the test, many in the lower and middle categories will

be stimulated to bring their physical condition up nearer a par with the better men in the unit.

Interest in physical conditioning can be aroused in large organizations by using the test to determine the most proficient unit in the organization. In such a contest few rules are required other than setting up a minimum percentage of a unit's personnel that must be tested. Ninety percent is the normal minimum. A testing committee should be designated to insure uniformity of testing.

Competition of a man against himself can be created by the test. Everyone likes to beat his own record in any achievement. The hope of bettering a previous record induces men to put more effort into preparation into their physical conditioning training in anticipation of further testing.

THE TEST

The physical fitness test is strenuous, let there be no doubt about that. Rarely does anyone score well without greatly exerting himself. To a degree it is a test of courage as well because, frequently, a man makes a better score than his fellows simply because he won't quit when pain and fatigue cause others to drop out.

The test is valid. Luck plays no part in scoring. When supervised to insure every participant's executing each movement correctly it will clearly separate the men from the boys, the strong from the weak.

The events in the test were not pulled from a hat. Each one meets a standard that qualifies it to serve as a method of evaluating some factor of physical conditioning. The test factors are muscular strength, muscular endurance, circulo-respiratory endurance (more commonly known as "wind"), agility, and coordination. The test as a whole had to be an effective measure of all these factors.

Next, each event had to involve the use of little or no equipment. If the test were to be standardized throughout the Army, it had to be one that could be given anywhere troops might be stationed.

The entire test had to be designed to be given in one or two fifty-minute periods. A single event could take no more than two or three minutes.

No event could be included that might be dangerous for weak or poorly conditioned men. Nor could events be considered for the test that measured previously acquired skills. For instance, an event requiring a man to dribble a basketball a hundred yards down a paved road might well measure stamina, muscular endurance, and coordination. But for those men who had never learned to dribble a basketball the test would not be valid.

Test events had to be such that they could be scored on a point basis to measure progress, to motivate participants, and to allow competition between men and units.

The events have been arranged in

TEST EVENTS

The events have been arranged in two tests. These are identical except for the last event which was modified to permit indoor testing. The events are:

Outdoor Test

1. Pull-ups
2. Squat jumps
3. Push-ups
4. Sit-ups
5. 300-yard run

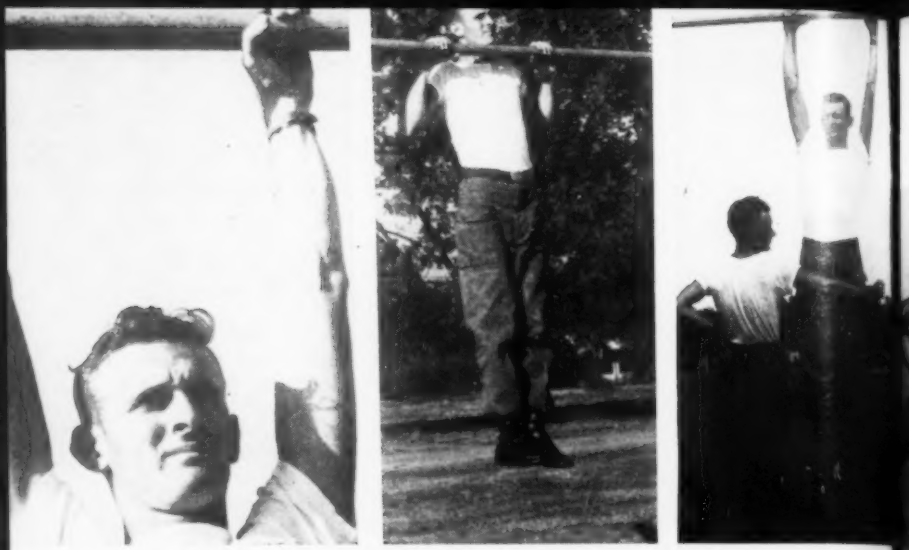


Figure 1. Left — Starting position for pull-up. Note that palms are to the front. Center — Participant pulls himself up until his chin is above the level of the bar.
Right — End of exercise, arms are straight. Note that another participant can steady the man by placing his arm across his thigh in the manner shown.

Indoor Test

1. Pull-ups
2. Squat jumps
3. Push-ups
4. Sit-ups

5A. Indoor shuttle run

5A(1). 60-second squat thrusts

Ten or more chinning bars are the only permanent equipment required. The bars, about eight feet from the ground, can be made from one-inch iron pipe, rigidly secured between posts. Stepping blocks,

Figure 2. Left — Incomplete pull up, chin is still below bar level.
Right — Incomplete pull-up, arms have not been allowed to straighten at end of exercise.

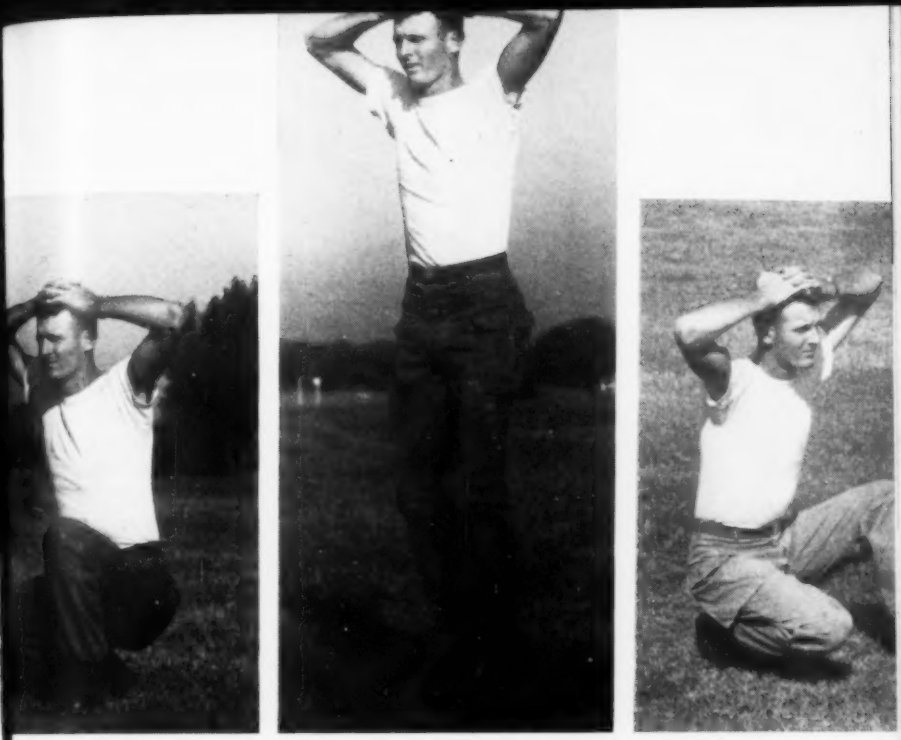


Figure 3. Left — Starting position for squat jump. Feet are eight inches apart; left foot eight inches forward of the right.
Center — Jump up, straighten the knees, and clear the ground by an inch.
Right — Incorrect squat jump starting position, feet are too far apart.

nailed to the posts, enable short men to reach the bar.

A brief description of each event follows (see paragraph 158, Rules Governing Tests, FM 21-20, November 1950 for detailed information):

Pull-ups: The chinning bar is grasped with palms of the hand to the front (see Figure 1). An assistant instructor or another participant can steady the tested man's body and prevent swinging in the manner shown in Figure 1. Hanging full length from the bar, the soldier pulls his body upward until his chin is slightly above the level of the bar. When the body is lowered until the arms are again straight, the pull-up is completed. It seems simple but have you tried it with palms to the front? A maximum score of 100 points requires 20 pull-ups, excellent — 13, and average — 8.

Squat jumps: The exercise begins in the squatting position, feet eight inches apart, left foot eight inches forward of the right and fingers laced on top of the head. (See Figure 3.) For this movement the performer is required to jump upward high enough to straighten the knees, raise the feet one inch from the ground and assume a new squatting position by reversing the position of the feet while in the

Figure 4. Left — Correct starting position for push-ups.
Right — Lower part of the chest touches the scorer's hand when participant lowers body.

air (move the right foot forward and the left foot back). Without practice the squat jump seems to paralyze the legs at first attempts because muscles are exercised which normal activities do not use. An individual obtains a maximum score for 75 jumps, excellent for 51 jumps, and average for 34.

Push-ups: This exercise is familiar to all Army personnel. Its difficulty comes in proper execution. (See Figures 4 and 5.) The performer is required to touch the scorer's hand, placed on the ground under the lower part of his chest, and keep his body straight during the movement. A maximum score results from 54 push-ups while 28 nets average.

Sit-ups: For this exercise the supine position is assumed with feet spread 18 inches and fingers laced behind the head. (See Figures 6 and 7.) The scorer kneels at the foot of the performer, grasps his ankles, and holds them tightly on the ground. The man being tested sits up touching his right elbow to the left knee, then returns to the supine position. This same process is continued alternating the right elbow to the left knee and the left elbow to the right knee. There is

Figure 5. Left — Common mistake, buttocks too high.
Center — Incorrect push-up starting position, the body is not straight.
Right — Incorrect, entire body is resting on the ground.

Figure 6. Left — Starting position for sit-ups.
Center — Right elbow touches left knee.
Right — Left elbow touches right knee.

a two-minute time limit on this event. Top score calls for 79 sit-ups; average is 46.

300-yard run: This is a shuttle run on a course sixty yards long. The distance is traversed five times to make the 300 yards. The runner travels the sixty yards in a marked lane (see Figure 8), rounds a stake at the end of the lane and continues back and forth until five lengths have been completed. It is more difficult for well-conditioned men to score high in the 300-yard run than in any other event. Time is limited to 61 seconds. Finishing the run in 44 seconds merits a maximum score

Figure 7. Incorrect — the knees are raised too high.

Figure 8. Left — The 300-yard (shuttle) run.
Right — Encircling the stake at end of first length. Note that runners are still closely bunched.

while 51½ seconds rates as average.

Indoor shuttle run: A 25-yard course is laid off with turning boards at each end of the course. The runner completes 10 shuttle lengths using the turning board at each turn. A 41-second time earns a maximum score and 47 seconds is average.

60-second squat thrusts: This event may be substituted when the indoor shuttle run cannot be utilized. Beginning at the position of attention, the performer assumes the squatting position with hands placed on the ground, shoulder-width apart. From this position, the legs are thrust to the rear with the weight of the body resting on the arms and toes. As in the push-up exercise, keep the body straight. Next, recovery is made to the squatting position, then to the position of attention. The exercise must be terminated in 60 seconds. A maximum score requires 41 thrusts in the time allotted; the average is 29.

CONDUCT AND ADMINISTRATION OF TESTS

Accurate testing requires complete uniformity in method of performance. Judges and scorers must be trained carefully so that all errors and violations of form are recognized and corrected uniformly.

A regiment should have a testing team of 6 officers and 30 enlisted men to test unit performance every three months. Efficient scheduling will enable the team to test the regiment in four days, supervising a battalion or its equivalent each day.

When tests are given at company level, a team from the company should be formed to test all platoons.

For uniformity, all men go through the test in a prescribed sequence. Each person begins with pull-ups and continues through the test taking the squat jumps, push-ups, sit-ups and 300-yard run in that order.

To give every contestant the same advantages and handicaps, all men should wear the same uniform — usually combat boots and fatigues; all men should complete the test in the one testing period; and vigorous or unusual physical activity should not be scheduled immediately before the test.

The recommended testing section of 6 officers and 30 NCO's is ideal to supervise a company strength unit. Normally, such a team can test a company in two hours.

One officer oversees the entire proceedings; one officer takes charge of each event, and five NCO's, serving as scorers, assist at each event except the 300-yard run where there should be ten. Supervision is simplified by organizing the company in groups of 10 men. Here, the coach and pupil method is used permitting one NCO to score every two men participating in the first four events.

In event a thirty-six-man testing team cannot be spared from duty, the number can be reduced substantially by testing units a platoon at a time.

Each participant has a score card, DA AGO Form 705. If not available, the score card can be printed or mimeographed as shown in FM 21-20.

Use only one score card per man. These are marked by the scorer at each event. At the end of the test,

they may be collected and retained in the orderly room. When retesting, the score card is re-used and the testee is challenged by the evidence of his last performance.

Results on the score card relay important information to the commander. Careful analysis will reveal the individual condition of his men, condition of the unit, effectiveness of the PT program, and finally, the training necessary to whip them into shape.

SCORING

Scoring standards are high. However, if they were not, the test would not be efficient since everyone can at least execute the exercises. A creditable score is obtained only where a man exerts himself fully.

The scoring was designed so that in a well-conditioned unit not more than one per cent would score above the maximum 100 points in an event. On the other hand, not more than one per cent would fail to score. The scoring tables were scaled to indicate fifty points (average score) in each event for those in good condition or a total of two-hundred and fifty points for the five events. Some units establish this total as the minimum qualification score while others lower this mark by fifty points.

To most individuals the scoring table does not indicate the thoroughness of the test. It is while participating that the requirements appear monstrous (try one event yourself, sometimes). Yet, they are not beyond reach.

The PT test alone will not enable you to achieve excellent physical condition. A unit *must* have an *organized, progressive PT program* reinforced with a definite goal, and a standard for every soldier to shoot for. Then, the test will serve its purpose. Thus strengthened, the unit will possess one of the greatest assets obtainable by a military organization — physical *preparedness.*

The spirit of leadership appears in all walks of life, but must of all in the career of arms, because there the strain, the risk and the responsibility are higher than anywhere else.

Cyril Falls, Chichele Professor of the History of War, Oxford University

So You Want
Aerial Photos?
By LT. MAURICE B. TUMAN, Infantr

PLATOON, company, battalion and regimental commanders are always expressing a need for *timely* aerial photos, for tactical intelligence purposes, for use in both combat and training. Many commanders and their staff officers feel the present Joint Air Ground Operations system of procuring aerial photographs for small unit leaders should be supplemented by some means, particularly from the standpoint of delivery time.

If you have not already faced this problem, you may soon — and if you have an L-19 aircraft, a K-20 camera, and a Signal Company nearby, you'll find the problem easier to solve than you thought.* However, you will need an aerial photo procurement program and a photo computer.

AERIAL PHOTO PROCUREMENT PROGRAM

The best reason for developing an aerial photo procurement program is the speed of photo delivery you'll get. During Exercise Long Horn, the average time between request and delivery of aerial photos through the JOC system was approximately 30 hours. Under the very best conditions Air-Ground Operations System photos were delivered to the 47th Division in 12 hours and 10 minutes.

Within the 47th Division itself, by using organic equipment for certain types of missions, units were able to get prints in as little as 2 hours and 20 minutes. During a recent photo demonstration at Camp Rucker, Alabama, 60 complete prints were delivered to the Commanding General in the field with a total elapsed time of 63 minutes measured from time over target to receipt of the finished print.

There are at least ten other reasons why an aerial photo procurement program may be of definite value to your unit:

1. It is immediately available to you, weather permitting; and even under very adverse weather conditions, pilots usually can get their planes into the air for these local type missions.
2. It eliminates some of the steps in the request channels and saves time.
3. It uses local pilots and photographers who are more conscious of the division mission and its immediate objective: consequently, they are more familiar with photo targets.
4. Its speed compensates for the fact that tactical photo targets often appear and disappear on very short notice.
5. It uses photo interpreter personnel, organic to the G2 Section who are stationed at the processing laboratories to give you immediate photo interpretation of the prints if desired.

*All combat divisions are authorized fixed-wing Army aircraft and division signal companies are equipped with three K-20 cameras. It is believed that the camera mount described later in this article can be modified to fit other models of fixed-wing Army aircraft, as well as the L-19.

6. It provides negatives which are immediately available for reproduction if you need extra prints.
7. It uses the signal company. This company, because of its familiarity with the division area, can deliver prints rapidly.
8. It enables you to use both pilot and photographer as aerial observers while on your photo mission.
9. It takes advantage of the mobility of the processing equipment and the capabilities of the L-19 aircraft. This mobility allows the entire photo unit to stay up with the division as it moves.
10. It permits you to operate the K-20 yourself, if you wish, to conduct your own aerial reconnaissance.

ARMY AVIATION PHOTO PROGRAM

The advantages of an Army Aviation Photo Program to a division in training are too great to be neglected. In the 47th Infantry Division, locally produced photos have been used extensively, in intelligence and counterintelligence training programs, and in tactical field problems and maneuvers. These photos may be used to:

1. Check camouflage discipline of bivouac areas, gun emplacements, fox holes, CP and OP locations.
2. Make terrain analyses to check trafficability of soils, woods, roads, and bridges.
3. Locate enemy road blocks, minefields, and troop concentrations.
4. Train intelligence specialists in photo interpretation. Local coverage gives the photo interpretation team a chance to actually ground-check the results.
5. Check march discipline of both motor and foot marches.
6. Provide map supplements and substitutes.

These are real and practical needs that exist in all Infantry divisions, especially in newly activated divisions.

An important fact is that these locally taken photos will relieve the Air Force of part of its heavy burden of photo reconnaissance.

In every discussion of the employment of light aviation for photo reconnaissance, the question arises, "Can this be used in actual combat?" The answer is, "It is being used in Korea today."

Another question: "Isn't it expensive?" An L-19 costs $6,000; a K-20 camera, $200; and you need two men. Suppose you sent a reconnaissance platoon of light tanks out to get your information. A tank costs $64,000, has twice as many men per crew.

No program can be so complete that it does not have some disadvantages. That is true also of Army Aviation-type photography. Perhaps the biggest disadvantage is the 4" x 5" negative or print size of the K-20 camera. While the prints *can* be enlarged, the enlarging process causes loss of valuable detail. This disadvantage has led to a very worthwhile innovation in the mechanics of getting the prints to the people that need them. It is very seldom that all the necessary areas to be photographed can be included on one negative. This means that the photos have to be put together in an uncontrolled mosaic, if the using platoon leader is to avoid carrying a handful of 4" x 5" prints.

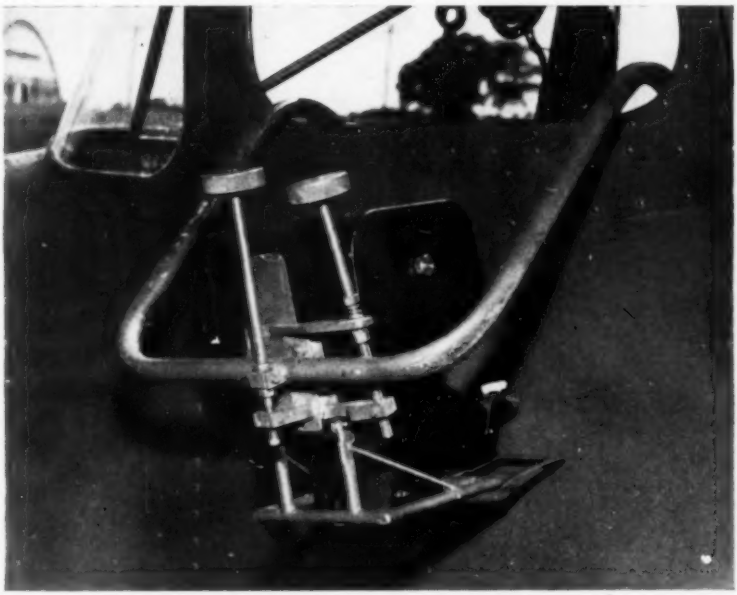
This problem was successfully solved by taking a photograph of the finished mosaic. Single prints of the finished product are then turned out by signal photo personnel in sufficient quantities so that every squad leader in the division can have a copy in his hands in less than 24 hours.

CAMERA MOUNT*

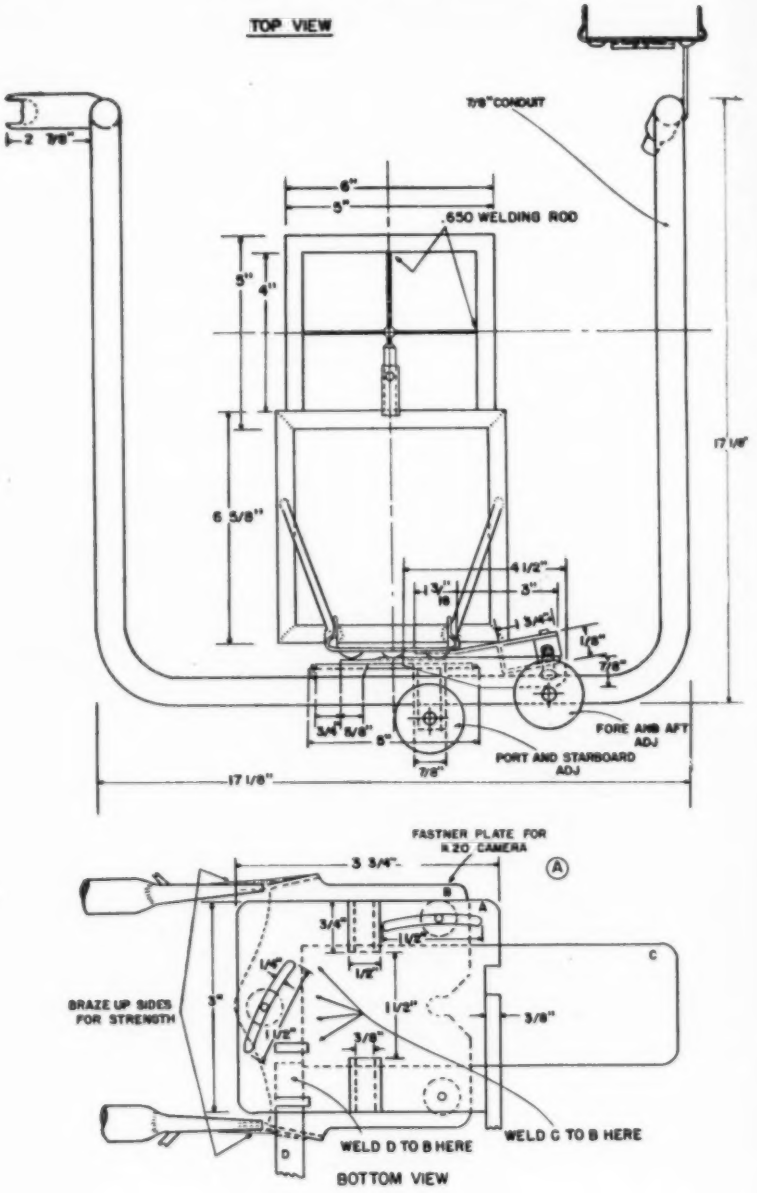
The mount developed in the 47th Division for making vertical photos from L-19 aircraft is illustrated in Figure 1. One outstanding feature of this mount is that it permits the camera to be leveled independently of the aircraft. Complete working drawings for constructing the mount are shown in Figure 2. This mount can be constructed by post or division ordnance personnel at a very low cost.

PHOTOGRAPHER AND PILOT TRAINING

Photographers and pilots must be trained so that photo missions may be flown with the least number of errors. Taking aerial photos is considerably more complicated than merely snapping a shutter. The 47th Division trained its aerial reconnaissance photographers and pilots by a process of trial and error. Pilots with no previous training as aerial photo pilots soon learned to follow desired flight paths at de-



*Ed. Note: The Army is currently experimenting with various type camera mounts. A Department of the Army Technical Bulletin (TB SIG 229) has recently been published on Field Expedients for Aerial Photography.


TOP VIEW
7/8" CONDUIT
2 3/8"
6"
5"
.650 WELDING ROD
5"
4"
17 1/8"
6 5/8"
4 1/2"
3"
1 3/4"
1/8"
7/8"
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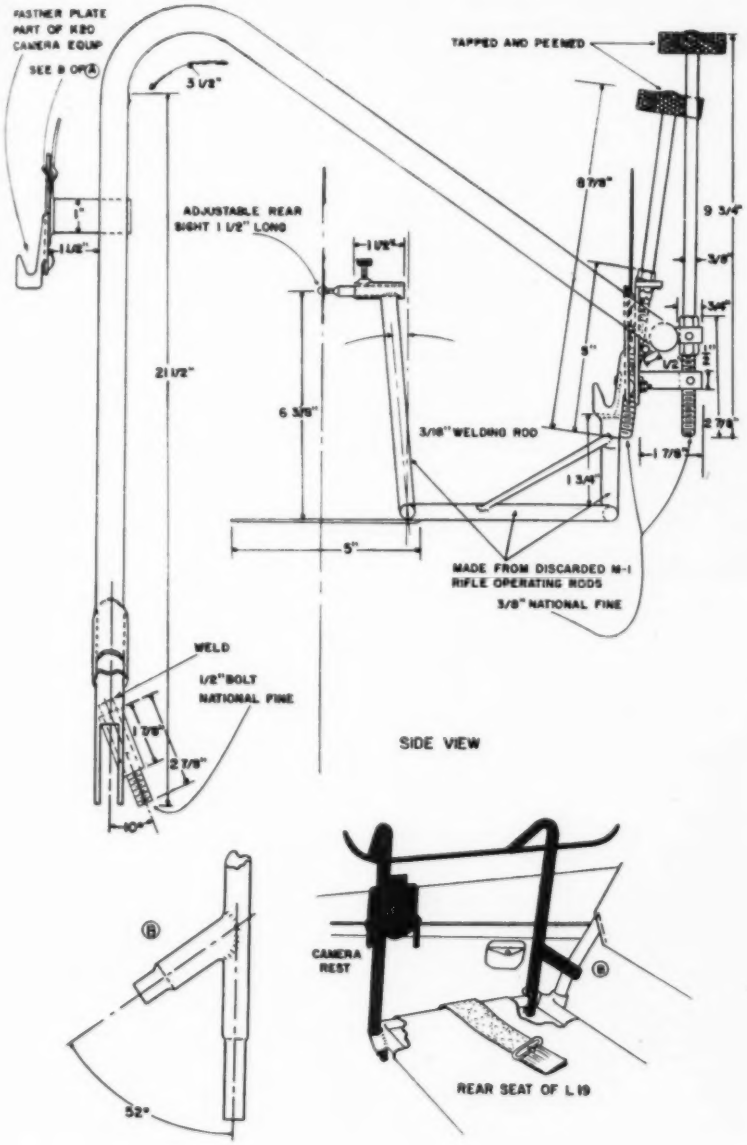
FORE AND AFT ADJ
PORT AND STARBOARD ADJ
17 1/8"
FASTNER PLATE FOR K 20 CAMERA
3 3/4"
A
B
C
D
3/4"
1/2"
1/4"
1/8"
BRAZE UP SIDES FOR STRENGTH
3"
1 1/2"
1 1/2"
3/8"
3/8"
WELD D TO B HERE
WELD C TO B HERE
BOTTOM VIEW


FASTNER PLATE
PART OF R20
CAMERA EQUIP
SEE B OF Ⓐ
3 1/2"
TAPPED AND PEENED
8 7/8"
9 3/4"
3/8"
3/16"
1/2"
1"
1 1/2"
ADJUSTABLE REAR
SIGHT 1 1/2" LONG
1 1/2"
21 1/2"
6 3/8"
3/16" WELDING ROD
1 7/8"
2 7/8"
1 3/4"
5"
MADE FROM DISCARDED M-1
RIFLE OPERATING RODS
3/8" NATIONAL FINE
WELD
1/2" BOLT
NATIONAL FINE
1 7/8"
2 7/8"
40°
SIDE VIEW
Ⓑ
52°
CAMERA
REST
Ⓑ
REAR SEAT OF L 19

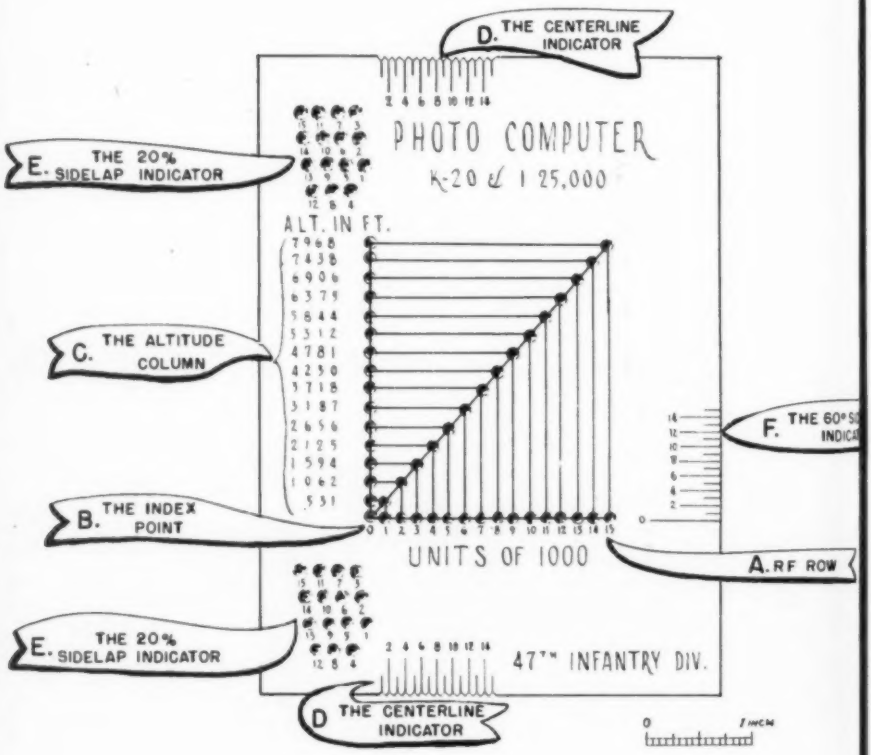
sired altitudes. They developed a keen interest in determining what errors had produced incorrect photos, and worked hard to develop and follow correct procedures.

THE PHOTO COMPUTER

A photo computer (see Figure 3) was developed to permit predetermination of flight paths, amount of overlap when making photos for specific missions, and frequency of shutter snapping when flying a flight path.

In a matter of seconds, when used in conjunction with a 1:25,000 map, this computer solves many problems by:

1. Indicating the flight path of aircraft over the area to be photographed.
2. Giving the correct altitude for pilot to fly to obtain a photo of given scale.
3. Showing the total ground area covered by a single exposure from a K-20 camera at the various altitudes.



4. Giving the pilot the second, third, fourth, and subsequent flight lines for producing an aerial mosaic.
5. Showing the photographer how many exposures are necessary to cover a given strip with the necessary 60% overlap for stereo pairs.
6. Giving the representative fraction of the photo in thousands.

The photo computer is made of one solid piece of clear pleixiglass 4⅜" x ⅛" x 6⅛" (See Figure 3). In the following paragraphs (A through F), the use of each part of the computer is explained.

A. RF ROW

The holes in this row are numbered from 1 through 15. They are read in units of 1000. That is, the number 1 represents the scale of 1:1000; 2 the scale of 1:2000; and so on through 1:15,000, represented by the number 15.

Each of these holes above the row of numbers determines the width of rectangles etched in the glass. One rectangle originates from each number (and hole) along the RF row. A pencil point is inserted into the appropriate hole and used to outline the photograph on a map or overlay when plotting. These rectangles represent the area on a 1:25,000 map covered by the photo at the various RF's. More about this later.

B. THE INDEX POINT

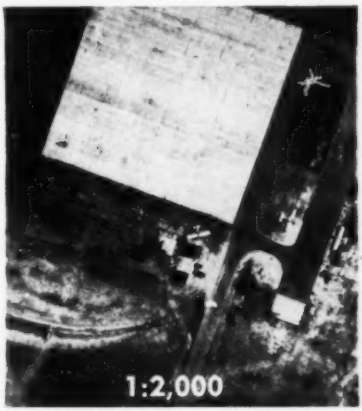
This "o" point represents the lower left hand corner of the area covered by the photo. It will be the lower left corner of each rectangle showing map areas covered at the various RF scales.

C. THE ALTITUDE COLUMN

The groups of numbers in this column give the altitude* in feet that the aircraft must maintain to obtain the correct scale of the photos. Corresponding scales are in the RF row (A).

For the purpose of clarification, assume the scale of 1:10,000 is being used. The altitude desired is determined by locating the number

*Note: This is the altitude from the target to the aircraft, not from sea level.



10 on the RF row (A). The rectangle formed for this scale will be the area that a 1:10,000 RF photograph will cover on a 1:25,000 map. To the left of the slanting line the altitude is read as being 5,312 feet. Therefore, the aircraft must fly at 5,312 feet above the target to obtain the scale of 1:10,000.

D. THE CENTERLINE INDICATOR

Centerline indicators are located at both top and bottom of the template and notched for convenience. Each notch is marked, but only the even numbers are printed so as to avoid confusion in reading. There are 15 notches, one for each scale indicated in the RF row (A). Each number on the centerline indicators (D) corresponds to the same number on the RF row (A). For example: To locate the centerline of the photo strip having an RF of 1:10,000, place a dot opposite the "10" on both top and bottom indicators and connect these dots with a line.

E. THE 20% SIDELAP INDICATOR

Like the centerline indicator, the numbers 1 through 15 correspond to the RF row (A). This indicator is used when more than one photo strip is desired. After locating the centerline of the first strip at the desired scale, align the appropriate numbers at top and bottom of the 20% sidelap indicator along the previously located centerline so that they coincide. For example: When the RF of 1:10,000 is being used, the number 10 on both top and bottom of the centerline indicator (D) is marked. Between these points the first centerline is constructed. To obtain the next strip we simply move the photo computer to the right until the number 10 on both top and bottom sidelap indicators (E) coincide with the centerline we have just drawn. Next, mark again the number 10 on the centerline indicators, thus constructing the centerline for that strip. Continue the process for as many strips as desired. Each time

you locate the centerline of another flight you automatically include the 20% sidelap necessary, which already is computed on the template.

F. THE 60% OVERLAP INDICATOR

The numbers on this indicator also correspond to the RF row (A), but only the even numbers are printed. The bottom line of the indicator is marked O, and is further identified by a line longer than the others. 60% overlap can be determined by placing a pencil next to the desired scale and then sliding the template upward until the O is even with the pencil. The template will then be in position for the next photo. For example: again assume we are using the scale of 1:10,000. First, lay out the first photo of the strip using the rectangle determined by number 10 and the index. Without moving the template, place the pencil next to the number 10 on the 60% indicator. Now slide the template upward, keeping the pencil in place, until the O and the pencil are aligned. Mark in the next photo either by pencil or mentally. One photo overlaps the other the desired 60%. Again using the rectangle determined by the index and the number 10, repeat the process as long as necessary.

When determining the number of photos necessary for a given strip, it will be necessary only to count the number of times the template must be manipulated in the procedure as stated above in order to cover the area. Individual marking is not necessary. By multiplying the number of exposures per strip by the number of strips the total amount of exposures necessary to cover the requested area can be determined.

So you want aerial photos — quickly. Perhaps this article has indicated that the desired speed can be obtained. Think it over.

The Attack Course

By LT COL HARRY M. KEMP, Infantry

WHAT happens to an attacking unit when its commanders have not properly coordinated the plan of maneuver and the plan of fire support? What happens when this unit does not use a proper formation, when it fails to launch a vigorous assault, or when reorganization on the captured ground is not prompt and complete? Very likely the unit will fail in its attack, or if it does attain the objective, it may take unnecessary casualties and then be dislodged by a prompt counterattack.

These fundamentals of attack are best taught, understood, and retained under close-to-actual battle conditions. The Department of the Army has devised a battle indoctrination training exercise known as the *Attack Course* which has joined such old timers as the Infiltration Course, Close Combat Course, and Combat in Cities Course — and the new Small Arms Fire Course — as a mental conditioner.

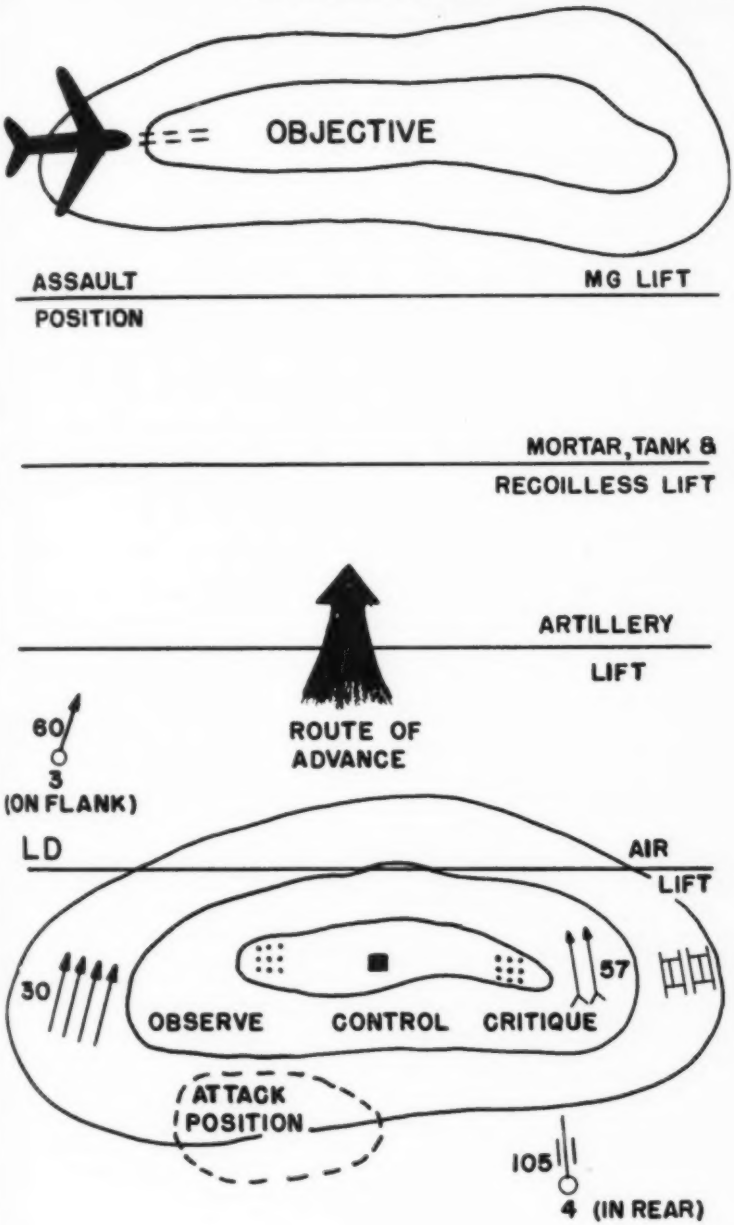
All of these battle indoctrination exercises prepare the individual soldier to withstand the psychological and physical shock of *initial* combat by teaching confidence, competency in using weapons, and teamwork. Although the various battle indoctrination courses are a one-time requirement for Infantry trainees, the methods they teach are to be applied in normal tactical training exercises until they become habitual techniques to the soldier.

As no training time is scheduled specifically for the Attack Course, it must be integrated with the time scheduled for small unit tactical exercises.

The Attack Course is a live firing exercise (actually the Infantry-Tank-Artillery-Air team in the attack) with conditions set up to achieve combat realism to the limits of safety. By watching and taking part in the course, the soldier learns the actions of small infantry units (squads and platoons) in an attack on a limited objective. By the emphasis placed on them he understands the necessity for coordination between the maneuver and the fire support elements; formations; proper method of assault; and rapid, complete reorganization.

Troops undergoing this training participate as Infantrymen, except tank crews who are trained in their specialties while mounted in their tanks as part of the attacking force.

The rifle squad is the basic unit used in the Attack Course. However, to best use the terrain, ammunition, and training time, it is advantageous for a maximum of two rifle platoons to negotiate the course at the same time providing, of course, that the terrain and control measures permit. *Trained* personnel (not trainees) man all artillery, tanks, and Infantry supporting weapons. Before negotiating the course proper, trainees participate


OBJECTIVE
ASSAULT
POSITION
MG LIFT
MORTAR, TANK &
RECOILLESS LIFT
ARTILLERY
LIFT
ROUTE OF
ADVANCE
60
3
(ON FLANK)
LD
AIR
LIFT
30
57
OBSERVE
CONTROL
CRITIQUE
ATTACK
POSITION
105
4 (IN REAR)

to demonstrate and lead them through a problem similar to the in one small-unit exercise designed Attack Course.

Setting up and running an Attack Course is a big job. Its difficulties may be lessened by the procedure advocated by The Infantry School.

Following your assignment to this task, your first concern will be to check directives and information from higher headquarters. Department of the Army Training Circular No. 14, 28 March 1952, presents the basic information on battle indoctrination and the courses concerned. Training directives put out by your own unit will be based on this circular.

Having absorbed this background material you'll be ready to select the terrain for your Attack Course. A schematic diagram of suitable terrain is shown in Figure 1. At the starting point of the course we need some high ground, a hill, a ridge, or perhaps just a rise that dominates the immediate area. This high ground serves several useful purposes. From here the trainees who will negotiate the course can see a firing demonstration of the weapons that will support their attack, then the squads or platoons who are waiting their turn can watch other units doing their stuff. Here a control tower or control point can be located. Also this high ground permits an attack position to be located to its rear, thus helping to create a logical tactical situation. The line of departure for the maneuver element can be located at the top of this hill or ridge, or can be designated at some other likely terrain feature in the immediate vicinity, such as a tree line or a road or trail. High ground at this point also provides suitable firing positions for our direct fire weapons shown in the diagram. There must be good observation and fields of fire from here to the objective.

Normally, safety precautions require the route of approach for the maneuver element to be a direct line from the starting point to the objective, as shown in the diagram. A logical objective, another hill, ridge, or other high ground, is located at the far end of the course proper. Since this action is a limited objective attack by a platoon, the objective should be located 400-700 yards from the line of departure.

The terrain problem settled, we consider the types and locations of the supporting weapons to be used in the exercise. If tactical aircraft is available and safety permits an air strike on the objective, plans should be made for close air support. If tactical air cannot be used, it may be possible to simulate an air strike by using the Army light plane, coordinating its use with detonation of demolition charges on the objective to simulate explosion of rockets.

The weapons *required* to be used include those organic to the rifle company (60-mm mortars, 57-mm RR, and LMG's), tanks, and artillery (no larger than 105-mm). Other weapons that should also be used include those of the heavy weapons company (heavy machine guns, 75-mm recoilless rifles, and 81-mm mortars) and antiaircraft weapons (40-mm and cal. .50) in their ground support role.

Firing positions for the artillery should be located to the rear of the line of departure and on a line with the objective to permit overhead fire, as this course supersedes the

old requirement for overhead artillery fire as a part of battle indoctrination.

The direct fire weapons should be positioned to the flanks of the course in the vicinity of the line of departure so that they will be able to fire for a longer period of time and still permit troop safety. Heavy machine guns are permitted to fire over the heads of the maneuver element providing that safety regulations on such firing are complied with and the fires do not intersect over the heads of troops.

The mortars must be placed in position well to the flanks of the course where they can deliver fire on the objective and not be firing over the heads of troops, as overhead mortar fire is not permitted.

Safety regulation SR 385-310-1 and local safety regulations must be complied with in all respects, for battle indoctrination does not take the wraps off safety.

Weapons positions must be considered in relation to the route of approach to be used by the maneuver element. Critical points should be surveyed to determine their exact position in relation to each other. Those critical points include firing positions, the objective, flanks on the line of departure used by the maneuver element, and certain points along the route of approach where the center and flanks of the maneuver element will be located as it moves along in the attack. This surveying will permit the weapons to fire until the last possible moment and still provide troop safety. If areas adjacent to the course are being used concurrently, this surveying will insure troop safety there. The officer responsible for setting up the course will find frequent reason to consult and coordinate with the local range office.

The locations of supporting weapons, their sectors of fire, and target or target areas should be determined simultaneously. This is particularly important when sectors of fire may be restricted. Also, control lines must be located on the ground to determine when the supporting fires must cease or shift to greater ranges. (See control lines in Figure 1.) These control lines are determined by the safety regulations for each particular weapon. When the head of the maneuver element reaches each line, some weapon must cease or shift its fire. The control lines shown in Figure 1 give the order in which weapons cease or shift fire for a typical attack course. They must be determined, however, for each piece of terrain. Such natural features as small ridges or folds in the ground, brush lines, roads or trails, or stream beds provide good control lines and avoid artificiality. If these are lacking, construct control lines with logs, flags, or ditches that can be seen by the control officer from his control point.

Now the physical work begins. This includes:

1. Surveying the points previously mentioned.
2. Constructing a control tower or control point.
3. Constructing or improving control lines.
4. Laying communication lines from the control tower or point to all firing positions and the attack position. Wire communication enables the control officer to commence, cease, or shift fires and to start the maneuver element through the course. Radio com-

munication should also be available from the control officer to the mortars, artillery, antiaircraft weapons, and the leader of the maneuver element. The control officer should also have an emergency visual signal, such as a red smoke hand grenade, to stop all action.

5. Construction of typical defensive works on the objective. Foxholes, weapons emplacements, silhouette targets, dummies, and bunkers provide targets for crew-served weapons, and training in distribution of fire, bayonet, and the grenade. A bulldozer can dig hasty entrenchments and emplacements and pile mounds of earth to simulate enemy bunkers. A dozer can repair such works when they become battered beyond recognition.
6. Constructing and wiring demolition pits along the route of approach and on the objective. Quarter-pound TNT charges can be detonated along the route of approach to represent enemy artillery and mortar fire falling on the maneuver element. After our artillery and mortar fires must cease or shift for safety reasons, the charges on the objective can be detonated to simulate the continuation of our indirect fires until the maneuver element reaches the assault position. This helps to add realism to the exercise.

One more big task remains before the first group of trainees arrives: orientation and rehearsal of the troops who will man the supporting weapons and operate the course. *Experienced* soldiers are required to act as weapons crews, safety personnel, maintenance men, and instructors. The size of this operating group will vary depending upon the size of the unit going through the course and the supporting weapons used. Organic rifle company weapons, tanks, and artillery are always used; the *number* of weapons to be employed should be in proper proportion to the size of the unit going through the course. For example, one squad could logically have the support of one tank, while a two platoon problem could have a platoon of five tanks supporting the attack.

Vehicle and weapon crews can be reduced to key personnel. A safety officer will be necessary to supervise each grouping of weapons. You will probably have at least four separate safety officers, one each for direct fire weapons, tanks, mortars, and artillery. Others may be necessary, depending on the numbers and types of weapons you use and how they are grouped on the ground. These safety officers must know their duties thoroughly, the locations and targets of weapons which they supervise, all firing data, troop danger areas when weapons are firing, safety regulations concerning their particular weapons, and all signals and control lines to commence, cease, and shift fires. The artillery and mortar observers are also considered safety officers, since it is through these people that the control officer registers and controls those weapons. A safety officer moves with the maneuver element to correct any improper or unsafe techniques or tactics and to inform the control officer by radio when the unit crosses each control line.

The control officer is the key man in the safe operation of the courses. From his location in the control

tower he must have unrestricted observation over the entire course, intimate knowledge of the plan of operation, and reliable communications to all weapons and the maneuver element. Once the attack has started, realism is dependent on his control of supporting fires. If tactical aircraft support the attack, the tactical air control party is located with the control officer and directs the air strike. When the Army light plane is used to simulate the strike, the control officer can maintain radio contact with the pilots to coordinate the strike and detonation of demolition charges on the objective.

A few maintenance men will be needed to connect and check telephones, load and discharge demolition pits, operate control radios and telephones, and distribute ammunition.

The instructors required will include the safety officers and an officer responsible for overall operation of the course.

It is essential that the troops who will negotiate the course will have already been trained in basic individual techniques such as assault fire and use of the bayonet and the hand grenade. They must have been led through an exercise similar to the Attack Course and should have a basic understanding of the tactics used by the squad and platoon in attack.

As the period opens, the principal instructor presents a general orientation. This orientation takes place on high ground from which the trainees can observe the terrain over which they will advance. The orientation should cover the purpose of the course and its place in battle indoctrination. It should also show how previous training will be applied when the course is negotiated. A good aid to motivation is to show by one or two recent historical combat examples how the techniques and tactics learned and applied on the Attack Course help to save lives and win battles.

An important part of this orientation should be a brief discussion of all the supporting weapons which help the individual riflemen to reach the objective. A brief firing demonstration of each type of weapon is discussed or at the conclusion of the weapons discussion.

Next, an assistant instructor — perhaps the safety officer who will move with the maneuver element — takes over, orients the trainees on the terrain, and presents a tactical situation which brings them up to the time just before their attack. The first platoon (three rifle squads and platoon headquarters, less the rocket launcher team) moves to the attack position where orders are issued and the unit prepares to cross the line of departure. The rest of the trainees remain in place to watch. At this time the observers' instructor discusses the fundamentals of troop leading procedure, the attack order, actions in the attack position, combat formations, movement to the assault position, actions at the assault position, the assault, and reorganization.

The safety officer with the first platoon notifies the control officer that the platoon is ready to move out. As two Army planes swoop down on the objective to simulate strafing runs, TNT charges mushroom on the objective. Mortar shells pop from their tubes; artillery rounds rustle overhead. The objective erupts with terrifying

suddenness as the shells find their targets. Two tanks in position on a flank of the starting area blast away at enemy bunkers which can be seen to crumble as the rounds crunch home. Machine guns begin their riveting, recoilless rifles blast, and the antiaircraft weapons hammer away at enemy strongpoints. Phosphorus smoke shells plop on the high ground beyond the objective to screen this attack from enemy observation posts there.

Now the rifle platoon has come out of the woods to the rear of the line of departure (which is the crest of the high ground at the beginning of the course) and moves across the hill and down the far side toward the objective, some 600 yards away. Supporting weapons continue to pour their fire onto the objective area. The platoon is in a vee formation, with two squads up and one back, with all rifles at the ready position and bayonets fixed. The open terrain permits the observers to see each detail.

As the lead squads of the platoon reach and cross a line of logs which lie perpendicular to the direction of attack, the sound of artillery shells passing overhead stops. Shortly thereafter, the characteristic pop of mortars ceases. Realistic artillery and mortar shell explosions continue on several points of the objective area. These fires plus those of the direct fire weapons keep any enemy deep in their holes or drive them to the reverse slope of the objective to more protected troop shelters.

The platoon suddenly spurts into a run and spreads out laterally as a half dozen explosions erupt near the formation. It must be incoming stuff, but it fails to halt the advance.

Recoilless rifles, tank guns, and AAA weapons cease fire as the riflemen cross the last line of logs before the base of the objective hill, but the explosion of demolition pits and the chatter of machine guns lets the riflemen know that they are still getting supporting fire as the assault position at the base of the objective is reached.

Tank motors strain as the two tanks race to join the platoon at the assault position.

The rear squad moves up on line in the gap between the two leading rifle squads. The platoon deploys as skirmishers as the tanks fit into spaces on each flank of the center squad.

Rifles, BARs, and tank machine guns begin firing. The supporting machine guns cease their chatter; the explosions on the objective are seen no more. The platoon moves up the hill in the assault: riflemen move forward at a fast, aggressive walk, firing a shot every few steps from the hip or shoulder at known or suspected targets. They continue the rain of hot lead on the objective where supporting weapons left off. Sharp-eyed observers see several riflemen toss practice hand grenades into enemy emplacements to eliminate last-ditch resistance. Several others can be seen bayoneting realistic dummies propped in foxholes in aggressive attitudes.

The racket of the assault moves up and over the objective, and the observers see the squads deploy into defensive positions. Squad leaders move several men to new positions, and the platoon leader and instructor (distinguished by a white helmet) check the positions.

The platoon loads up in trucks sent to the objective by the control

officer and are taken to the starting point for a comprehensive critique. Here the instructor points out that this frontal attack was necessary for safety reasons, and that it is desirable to hit the enemy on his flank if it is at all possible.

In the meantime, at the conclusion of the assault, the next platoon to go through the course has been moved to the attack position to prepare for its problem.

A realistic attack course, based upon sound doctrine and operated with intelligence and common sense, can do much toward preparing our Infantrymen for combat — for victory.

Once the soldier is trained to his weapons, he becomes a part of a highly developed combat team of infantry, artillery, armor, and air. These battle teams are the most difficult, the most complicated of all teams to create. They must be capable of operating on unfamiliar ground, in darkness as well as in daylight, amid incredible confusion, danger, hardship, and discouragement. The leadership of such teams is of the utmost importance; it requires judgment, intelligence, courage, integrity, and resourcefulness.

General J. Lawton Collins

SAFE CONDUCT PASS
SOLDIERS OF THE UN FORCES:
This certificate guarantees good treatment to any enemy soldier desiring to cease fighting. Take this man to your nearest officer and treat him as an honorable prisoner of war.
DOUGLAS MacARTHUR
General of the Army
Commander-in-Chief
SAFE CONDUCT CERTIFICATE
Attention U.N. Soldiers:
This certificate guarantees good treatment to any Chinese or North Korean soldier desiring to cease fighting. Take this man to your nearest officer and treat him as an honorable prisoner of war.
Matthew B. Ridgway
Commander in Chief
United Nations Forces
CERTIFICATE

The Infantry and Psychological Warfare

By LT. FRED W. WILMOT, Infantry

WITH each new conflict the Infantry adds to its already impressive array of weapons. Almost inevitably these additions stem from new developments in science or technology, but Psychological Warfare — the Infantry's newest supporting weapon — is as old as warfare itself.

PAPER IS CHEAPER THAN BLOOD. From the beginning of time warriors have acknowledged this fact and have sought to gain advantage through demoralization of the enemy. The Bible furnishes many examples of Psychological Warfare, among these are: David and his explosion of the psychological myth of Goliath, and Gideon as he used an unfamiliar weapon to incite panic among the Midianite hordes. The medieval Genghis Khan knew the terrible power of rumor and used it deliberately to effect his Mongol conquests. During the Revolutionary War this crude but effective leaflet was circulated among British mercenaries:

PROSPECT HILL

Seven dollars a day
Fresh provisions and in plenty
Health
Freedom, ease, affluence and
A good farm

BUNKER HILL

Three pence a day
Rotten salt pork
The scurvy
Slavery, beggary and
Want

During World War I, in General Pershing's headquarters, a G-2D Section was organized to supervise Psychological Warfare. Tactical leaflets provided the principle means of battle-area propaganda on the Western Front. World War II planners made psychological warfare a continuous, systematic, and purposeful part of the general conduct of war. It was closely integrated with national policy and military operations, from the national governments through the theater headquarters down to all appropriate military echelons.

Though closely integrated with military operations in World War II, Psychological Warfare did not become an actual supporting weapon of the Infantry until the present war in Korea. Today, Psychological Warfare (PsyWar) is a member of the Army family. Two PsyWar Staff officers, members of the G3 Section Army, advise the Army Commander on PsyWar matters and plan Army PsyWar operations. The operating unit at Army level is the Loudspeaker and Leaflet Company. At Corps Headquarters a G3 Staff officer directs PsyWar operations. This is the lowest level where a PsyWar officer is assigned whose primary job is PsyWar. In Korea today, PsyWar officers have been appointed down to and including Regiment. At this level PsyWar work is done in addition to other duties.

It is only when Psychological Warfare is rooted in the combat situation that it is tactically effective in its support of the combat arms. It should be remembered that PsyWar is a supporting weapon, not a high level trick. The Infantryman does not expect his M-1 rifle to do the job of a 105mm howitzer; neither should he expect PsyWar to do the job of conventional weapons. Who is to say that when a war weary enemy soldier approaches our lines with a leaflet in his hands that he surrendered as a direct result of Psychological Warfare? The answer is — no man who has fought the battle and closed with the enemy. No! It was not Psychological Warfare alone, neither was it the force of arms alone. The situation was made physically untenable by force of arms, by the Infantryman as he pushed forward in battle, and mentally untenable by Psychological Warfare. It was not this one leaflet that did the trick as it was not one round of machine-gun fire or one round of artillery that made this man decide to cross the lines to safety. It was a smooth coordinated campaign designed to break his morale and finally his will to fight. This coordinated campaign can only be realized when Infantryman and "Psywarrior" work together.

The Infantryman in the line is perhaps most familiar with the tactical loudspeaker as a Psychological Warfare weapon. At first acquaintance, he may even hate to see the loudspeaker team arrive. He knows that his position will be subjected to enemy artillery or mortar fire in answer to this seemingly meaningless jumble of words. He digs a little deeper as he watches the team carry their loudspeaker forward of his position and return to dig in beside him. The appeal begins and the feared artillery answers in protest. The Infantryman curses the very existence of Psychological Warfare. Out of the hills in the distance come two ill fed and clothed enemy and are escorted down the hill to safety as the Infantryman spits, "Was it worth it?" It is not until that night that he realizes that it *was* worth it. He is told that the night patrol which he was dreading with its mission of securing prisoners for S2 interrogation has been called off due to the fact that the necessary information was obtained from the two prisoners who surrendered early in the afternoon. This is Psychological Warfare in action. This is combat PsyWar in support of the Infantry.

It is quite probable that an Infantry commander engaged in preparation for an attack will find that the Artillery unit supporting his attack will have been assigned leaflet firing missions in addition to HE supporting fire in the operations order. The question immediately arises in his mind: "Just how valuable will these leaflets be to me; will they save the lives of as many of my men as a like number of HE shells?" The use of Psychological Warfare, as any other supporting weapon, is a command decision. The commander acts upon the advice of his PsyWar Staff member, and decides whether or not the use of PsyWar will pay off in greater dividend for effort expended than the use of conventional weapons without PsyWar support. Infantry commanders are finding in Korea today that they are called upon to make this decision more often with

each month of combat. If his decision is to use PsyWar, and time permits, he may initiate a request for a leaflet directed to the particular enemy unit which he faces. He can call upon a loudspeaker team assigned to his division and, if time is of utmost importance, he may call for an airborne loudspeaker mission to be flown in his area.

But just how does the Infantry commander receive this support? Psychological Warfare is under G3 at all echelons; the request is passed up through G3 channels. And how long will this take? It may be possible for a commander to get a loudspeaker team within an hour or less depending upon availability and location of the team. An airborne speaker plane may be flying a mission in his area and can be reached for a mission by G3 air in a matter of minutes. The 1st Loudspeaker and Leaflet Company in Korea has been known to print and drop as many as twenty-thousand leaflets addressed to a particular unit in a particular situation in as little as sixteen hours. Again, whether to wait for PsyWar support or not, is a command decision.

In most situations the Infantryman will be in the best position to judge the mental state of the enemy he faces. He alone can supply necessary intelligence for pinpointing the target audience. Psychological Warfare is blind without proper intelligence. It is equally as pointless to beam a surrender message to an enemy who is well fed and in good spirits, as it would be to attack a well fortified bunker with a toothpick. The Infantryman can prevent such mistakes by providing answers to the PsyWar Essential Elements of Information when possible.

When provided with the necessary raw material in the form of intelligence about the enemy, Psychological Warfare is capable of shortening the war and saving lives by:

- Enhancing and exploiting the psychological effect of political, social, or military events.
- Lowering the morale of the enemy with a consequent loss in combat effectiveness.
- Producing a cumulative depressing effect on enemy morale over an extended period of time.
- Encouraging malingering, desertion, and surrender by individuals and by groups of enemy armed forces.
- Sustaining the morale of subversive and dissident elements in enemy and enemy-occupied territory.
- Deceiving and confusing enemy troops.
- Aiding in the control of civilians in liberated areas in order to facilitate our combat effectiveness.

In a combat operation the Infantryman uses fire-power; the "Psywarrior" uses words. The "Psywarrior" presents the enemy with reasons for surrender and disaffection; while the combat soldier, with a show of force, makes these reasons convincing. Force of arms alone can win a battle; PsyWar alone can not, but it can make winning less costly. Used in combination they are a potent weapon. The Infantryman and the "Psywarrior" working together can obtain the maximum results in the minimum of time, but only when the combat soldier has a clear concept of what PsyWar can do and what it can not do. He must be able to recognize occasions when it is appropriate to use propaganda against the enemy, and he must realize that the "Psywarrior" needs his help to accomplish the desired effect. The Infantryman must realize that ten or twenty fewer of the enemy shooting at him, because those ten or twenty believed a leaflet or loudspeaker broadcast and surrendered or stayed in their holes to be overrun, may save his life.

Letters to the Editor

Address all letters to: The Editor, Infantry School Quarterly, Training Publications Department, The Infantry School, Fort Benning, Georgia.

REALISM

Sir:

I have just read with interest the article "Small Arms Fire Course" by Captain Charles A. Nicholson in the July issue. Although I left a training division some months ago, the problem of identification and location of enemy fire was one that interested me while I was assigned. This article certainly indicates the step in the right direction.

Realism in training is one of the greatest requirements in our training centers today. I would like to add a few thoughts to Captain Nicholson's idea with the idea of increasing the realism in the course and possibly strengthening the training which could be derived from it.

With a little ingenuity, I feel sure that salvage armor plate could be so mounted in front of the custom made rifle mount to permit the return of fire by the trainee. Mounting this armor plate at an angle over a sandpit would insure deflection of bullets. A silhouette target could either be painted on or mounted in front of or alongside the piece of plate to score and provide competition, if desired. To insure the safety of the instructor firer, a dugout adjacent to the rifle with an electrical firing mechanism utilizing a solenoid (safety switch) could be employed. Such a device is relatively inexpensive and when used with the M1 is remarkably trouble free.

As I visualize a problem conducted on this course, it would go something like this: The initial phase would consist of a lecture and demonstration teaching the crack-thump method of range estimation and weapon location. This

period to be followed by a breakdown of the company into platoons with one platoon at a time proceeding through the course. This platoon, upon coming under fire, would be required to locate and return fire upon the weapon. The other three platoons could be using concurrent training to study such subjects as squad and platoon formations, control, scouting and patrolling, and other allied subjects.

The added realism, together with field firing training which would be gained with this type course would be most valuable. The element of risk could be reduced to a minimum and certainly would be no greater than that in some of our combat firing courses today.

As a final thought, the utilization of electrical control for targets, for firing of concealed weapons and other training exercises, it is in its infancy. A little imagination could surely provide greater advances in this line.

Sincerely,
DEXTER K. GRIFFITH
Lt Colonel
APO, N. Y., N. Y.

• Realism (with necessary safety precautions) is and has long been the goal of Infantry training. Effective training requires the use of considerable ingenuity and imagination. Any exchange of ideas on the subject of realistic training is always welcome. — *Editor.*

INTELLIGENCE

Sir:

In the July issue of the INFANTRY SCHOOL QUARTERLY Captain Jones in "A Question for Commanders" establishes the necessity for good combat intelligence. No one who has ever been in combat will disagree violently with anything that he writes.

However — I wonder if Captain Jones could explain how troops can be made and kept intelligence conscious? Perhaps he might even give us a yardstick for accomplishing this goal.

Yours truly,
1st Lt, Infantry
(Bn S2)

• We talked this letter over with Captain Jones who tells us that the only "yardstick" of the level of combat intelligence within any given unit is the success enjoyed in (1) producing combat intelligence for your commander, and (2) establishing effective counterintelligence measures.

Captain Jones suggests a few training techniques that may prove useful in raising and maintaining a high intelligence consciousness in any unit. These are:

(1) See that appropriate intelligence training is applied to all phases of a units training — not as an afterthought, but as an integral part of the exercise.

(2) The use of the aggressor concept and, where possible, a uniformed aggressor detail.

(3) Thorough and continuous training in the realistic processing of enemy documents and personnel. Incorporate these into tactical and administrative marches as well as small unit problems.

(4) The use of the eight-man battalion intelligence section as demonstration troops for the balance of a unit.

(5) Place posters in your dayrooms and mess halls showing the value of combat intelligence.

Meet the Authors

Captain William C. Wood, author of "Offensive Tactical Air Support," is an instructor in the Staff Department at The Infantry School. Captain Wood was assigned to the 24th Division upon his graduation from West Point in 1945. Later, he joined the 2d Division and accompanied that unit to Korea as an Assistant Division G3.

Lt Palmer S. McGee, Jr., author of "The PT Test," graduated from West Point in 1945. For three years he served with the 26th Infantry Regiment, 1st Division, in Germany. He is now a physical training instructor at The Infantry School.

A repeater to the QUARTERLY'S list of authors, **Captain Alfred Phillips,** graduated from the Infantry Officer Candidate School in January 1944. He served as rifle platoon and rifle company leader in the 86th Division in both the European and Pacific theaters during 1945 and 1946. Captain Phillips reentered active duty in March 1950 and is currently assigned to The Infantry School as instructor of The School's Combat in Cities Problem. Captain Phillips' "The Village" appeared in the January 1952 QUARTERLY.

Major J. K. Cockrell presents in this issue his fourth airborne article for the QUARTERLY. Major Cockrell graduated from the Infantry Officers Advanced Course at Fort Benning in April 1951 and is now S3 of the 325th Airborne Infantry Regiment at Fort Bragg, N. C.

The author of "What's Your Decision, Soldier?", **Lt Col Emil V. B. Edmond,** is no stranger to QUARTERLY readers. Colonel Edmond, who was formerly an instructor at The Infantry School, served in World War II with the 16th Infantry, First Division. He is now in the Infantry division of the Career Management Branch, Department of the Army.

Major Anders Grafstrom, author of "War in the Sub-Arctic," is Adjutant to the Army Commander, Swedish Army. In addition to his duties as Adjutant, he is editor of the Swedish official Army monthly magazine, "Arme Nytt." Major Grafstom recently completed a 30-day visit to America, during which time he visited Camp Carson where he gave some instruction on winter warfare.

The author of "The Infantry and Psychological Warfare," **Lt Fred W. Wilmot,** knows whereof he speaks,

having served as a combat Infantryman in two wars and as a psychological warfare officer in Korea. During World War II, Lt. Wilmot served in Europe with the 407th Infantry. He was commissioned in the Regular Army following his graduation from the University of Arkansas in 1949 and attended the Basic Courses at Fort Riley and Fort Benning before going to Korea in 1950. He served with the 17th Infantry, 7th Division, until early in 1951 when he became a member of the Psychological Warfare Staff at Headquarters, Eighth Army. Upon his return to the United States, Lt. Wilmot attended the Psychological Warfare School Fort Riley, Kansas, and is now assigned to the Psychological Warfare Center at Fort Bragg.

Lt Maurice B. Tuman, author of "So You Want Aerial Photos," is in the G2 section of the 47th Division.

A World War II Norden Bombsight mechanic in the Air Force, Lt. Tuman left the service after the war and became a high school mathematics and history teacher. He joined the Minnesota National Guard, as an Infantryman, in 1948, and came on active duty with the division in January 1951.

Lt Col Oliver O. Dixon, author of "Toward Better Intelligence," is chief of the Intelligence Group of the Staff Department at The Infantry School. During World War II Colonel Dixon served with the 32d Division as a battalion and later regimental commander.

Major Warren P. Davis, author of "It's Either a Good Squeeze or a Miss," has been team captain of the U. S. Army Rifle Team for the past two years, and has also fired as a member and as team captain of the Fort Benning Pistol Team. He has been an instructor in the Small Arms Committee on the Weapons Department, The Infantry School, for two years. During World War II he was in combat as a rifle company commander with the 65th Infantry Division in Europe. He graduated from The Infantry Officer's Advanced Course in 1950.

Lt Col Harry M. Kemp, author of "Attack Course," entered the Army with the 28th Division in February 1941. He was commissioned six months later and served in Europe with the 28th Division as a company commander, battalion executive officer, and battalion commander. He graduated from The Infantry School's Advanced Course in 1950 and is currently assigned to the Tactical Department as an instructor in small unit offensive tactics.

Annual Index

October 1951 through July 1952

For the convenience of its readers, the QUARTERLY *presents in this issue synopses of all articles appearing during the year.*

A limited number of copies of the four issues are obtainable at the Book Department, The Infantry School, Fort Benning, Georgia, at 65¢ a copy.

OCTOBER 1951

"OPERATION RIPPER" — A condensation of the commander's report. One of the most important and interesting operations of the Korean War as reported by the Commanding General of the 25th Division.

"GIVE AIRBORNE SPURS" — *by Lt Col Edward M. Flanagan, Artillery.* Ideas on how to get the most out of airborne manpower and, at the same time, use airborne forces to cut down the enemy's manpower superiority.

"A WARNING" — *by Capt A. J. Crupt and WOJG William F. Odom.* The author feels that our sniper equipment, training, and employment need improving. Proposals for improving our sniping are given in this timely and important article.

"TIE IT DOWN — TIGHT!" — *by Maj J. K. Cockrell, Infantry.* Methods for securing cargo in aircraft.

"THE RIFLE PLATOON BELOW ZERO" — *by Lt John P. Vollmer, Infantry.* A rifle platoon leader's experiences in the first bitter Winter Campaign of the Korean War. Tips for survival that may pay off in future operations.

"SECURITY DURING MOVEMENT" — *by Lt Col Lyman S. Faulkner, Infantry.* Factors the commander must consider in evaluating his requirements for security during movement. A complete discussion of the doctrine of movement to contact.

"WOODEN WORKING MODEL — THE CARBINE" — *by Maj Frederick H. Black and WOJG Coats Brown.* How to take the mystery out of teaching the functioning of the carbine. Plans and directions for constructing an interesting, effective training aid.

"A HEAVY WEAPONS COMPANY IN KOREA" — *by Capt Charles Multop, Infantry.* A heavy weapons company commander's experiences in Korea with the 2d Division. A report and recommendation for the improvement of the fighting ability of our heavy weapons company.

"PANORAMIC SKETCHING" — *by Capt James D. Harney, Infantry.* Principles of sketching that can be applied and used in any combat or training operation to supplement maps and give a better understanding of terrain.

"TIGHTEN YOUR LANDING PATTERN" — *by Lt Col John R. Richmond, Infantry.* Proposals for increasing the fighting effectiveness of airborne forces.

JANUARY 1952

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"AUTOMOTIVE FIELD EXPEDIENTS" — *by Lt Thomas D. Kerr, Infantry.* Emergency measures for repairing military vehicles in the field. Common sense solutions to common automotive problems.

APRIL 1952

"DEFENSE OF REAR AREAS — PART I" — *by Lt Col Karlton Warmbrod, Infantry.* A complete discussion of the technique of protecting rear areas from enemy attack.

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"THE MOCK 57" — *by Capt Willis L. Buckner, Infantry.* Plans and directions for making a mock 57-mm recoilless rifle for training troops in units that do not have enough real 57s.

"SUB-CALIBER RECOILLESS RIFLES" — *by Mr. Ray S. Miller.* Working drawings and pictures of the sub-caliber devices in use at The Infantry School. These devices save a tremendous amount of money, provide a realistic backblast, and train recoilless rifle crews in a highly effective manner.

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JULY 1952

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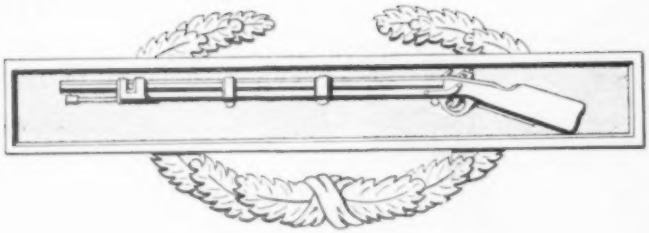

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